Massachusetts Medical Society

MEETING OF JUNE 10, 1914.

SYMPOSIUM ON SYPHILIS, WITH ESPECIAL REFERENCE TO ITS IMPORTANCE IN MASSACHUSETTS.

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I.

SYPHILIS IN MASSACHUSETTS.

BY ABNER POST, M.D., BOSTON.

RECENT scientific studies have brought the subject of syphilis very prominently before the attention of the medical public. Magazine articles, popular lectures, and eugenic studies discuss the subject for the general public. Social reformers talk glibly of phases of the disease which have baffled the research of clinician and scientist. It has been deemed a proper subject for consideration by this body, and it has fallen to my lot to say something on syphilis as it affects our own state.

It is possible to overestimate the amount of syphilis in the community. This is especially easy to those who insist upon classing syphilis with other diseases under the name of venereal and enumerating all together.

It is also very easy to under-rate the disease and refuse to see it, because it does not conform to our preconceived ideas.

The tendency in the past has been to ignore and undervalue it. It has been taught that it is a disease of other countries and of cities. That was once true, but the conditions of other countries have been imported to this, and the increasing ease of travel is fast amalgamating city and country.

It has been said that it comes only to those who seek it, but this is very far from the truth.

The title "Syphilis in Massachusetts" might lead one to expect the result of a census, but no census exists.

This paper is intended to answer such questions as:

"What does syphilis mean to us in this state?"

"Is it of any importance?"

"Is there any reason why we should pay any attention to it, and if so, what?"

We can only estimate the amount of syphilis in the community by references in reports of various State institutions, and question its gravity in sources that are more interested in other directions. One of the very great difficulties in estimating the amount of syphilis in a community lies in the fact that syphilis and gonorrhea are so generally classed together, under the one head of venereal disease.

Whatever may be the case from the standpoint of the moralist, from the view of the pathologist, syphilis is a very distinct entity. Its relation to the public health, deserves study as a separate disease. Its distinctive microbe, its different beginning, its curious tendency to lie dormant or at least without outward manifestations, its occasional serious attacks on internal organs, its appearance in the offspring of a certain number of patients in fatal or disabling forms while it shows no effect in others, form a pathological entity that merits study as a distinctive disease, even if it is largely discriminated by unchastity. In other words, it is very much more than a venereal disease.

In every department of state industry or charity, this disease is a source of constant inquiry. In no one bureau can the questions be answered as to the exact amount or even the approximate amount of syphilis dealt with by that particular department.

It may be said that it is reported as most abundant in those departments which have learned to recognize it. Some years ago, the remark was made by a Massachusetts man that tuberculosis of the genito-urinary organs was rare in Massachusetts, and he was answered that it was apparently so, because Massachusetts doctors failed to recognize it; and time has shown the truth of that remark.

The largest number of state institutions under any one head, come under the control of the insanity board.

If I read the report of the insanity board correctly, the general average of cases of insanity of syphilitic origin amount to 6¼ per cent. (6.28), (while the cases of unknown origin in insane hospitals, amount to 32 per cent). But the number in different localities varies very largely—at Worcester, the proportion of syphilitics is said to be 6.25; at Danvers, it is called one of the principal causes of insanity; at the mental wards of the State Infirmary, it is given as 23.21 per cent.

The introduction of the Wassermann examination of the blood, gives a better means of testing the presence of syphilis than any we have hitherto possessed. The following extract from the annual report of the Psychopathic Hospital will give some idea of the percentage of syphilis as

found by the authorities of that institution, by the use of the Wassermann serodiagnosis.

In the report referred to we read:

"The value of routine Wassermann examinations of the blood serum, to establish the question of previous syphilitic infection, has been convincingly proved to every one associated with the clinic, and it seems unquestionable that all the insane hospitals of the state must get the benefit of routine Wassermann examinations if they are to single out the great number of mental diseases produced or modified by syphilis.

Doubtless the percentage of syphilis demonstrable in asylum material may rarely run over 10 per cent., but the acute material of the active hospitals may yield a percentage somewhere between 20 and 30 under the present conditions of society. Certain leads in therapy are thereby indicated.

More than ordinary attention is given to routine examination of the blood and of the urine, and special attention is given to the examination, by a variety of methods, of the cerebro-spinal fluid in cases where blood serum has proved by the Wassermann method a pre-existent syphilis."

In regard to the Wassermann reaction as a test of the presence of syphilis, it must be remembered that no one has ever claimed for the Wassermann reaction that it detected all the cases of syphilis, so that even the highest number reported with the Wassermann as a guide, is short of the absolute total. It must be appreciated that the failure to get a positive reaction, does not positively rule out syphilis.

The manner in which syphilis is developing as a cause of disease in internal organs, in form hitherto regarded as too infrequent to deserve consideration, is very striking. Syphilis of the stomach is a subject of investigation and the knowledge of its appearance as studied by the x-ray has advanced sufficiently to allow of its recognition at our hospitals. Certain cases of supposed tuberculosis, in our tuberculosis hospitals, in which the tubercle bacilli have never been discovered, are now recognized as syphilitic. Syphilis of the heart and great vessels is by no means uncommon. Of cases of sudden death from natural causes which came to autopsy in the Northern District of Suffolk County, during the last three years, 21 or 5 per cent. were due to syphilis. One was a gumma of the brain, 20 were due to endarteritis with aneurysm or stenosis of the coronary arteries. The examiner for the South District lays the same weight upon syphilis of the vascular system, especially of the aorta, as a cause of sudden death. These findings of the medical examiners are in accord with the findings of our insurance medical directors. That these forms of disease are recognized clinically in the state will be shown later this morning by other readers.

Hereditary syphilis has never received among us the attention it deserves. The reason is not far to seek—it has been pictured as largely fatal very early in infant life and as presenting a characteristic appearance, easily recognized, in those who survive. This characteristic appearance is found in a comparatively small number—others there are in whom the diagnosis is one of the most difficult of medical problems. During childhood, early or late, there may occur a series of symptoms too poorly defined to prove diagnostic. These children apply at separate clinics for ailments of the eye, ear, nose, throat, joints or nervous troubles. It is only by putting together all these symptoms, by studying the family, and making use of serological tests that one finally arrives at the truth. These children may be very greatly helped when their disease is recognized.

Such children are occasionally the source of very great annoyance, of legal action and of perversion of the medical truths. Their various lesions are attributed to violence and innocent people are accused of causing them. A comrade is accused of causing disease of the bones, by a kick; a teacher is accused of boxing a boy's ears and causing disease really due to an antecedent hereditary syphilis. Some of these children are believed, by their credulous relatives to owe all their ailments to vaccination.

At the children's hospitals, the bone and joint diseases of hereditary syphilis are with difficulty distinguished from tuberculosis and sometimes from various forms of osteomyelitis.

These children are present in the institutions for the feeble-minded and the epileptic—in how great proportion it is impossible to tell. It is very difficult to recognize any very great number in these institutions as syphilitic, but when we consider the mental status of known syphilitic children, the mental and nervous affections seem more numerous.

Heart disease in hereditary syphilis as well as in the acquired, is shown to be frequent and probably due to the constitutional disease.

The eye affections among these children are comparatively frequent. Mr. Greene, the field agent for the Commission for the Blind, remarked in a recent communication, "Interstitial Keratitis" apparently causes fully half as much practical blindness as ophthalmia neonatorum and many more cases of seriously defective eye sight."

Of the deaf and dumb children of the state, no very serious attempt has been made to determine the effect of syphilis. Some of the children are evidently syphilitic—a very cursory study of their personal and family records justifies the statement that possibly one-sixth of the total number of deaf and dumb children now being educated in the state, owe their defect to an antecedent syphilis.

There is very serious difficulty in the recognition and treatment of syphilis in hospitals, especially in the smaller hospitals of the commonwealth. There is constant difficulty in reconcil-

ing the rule that venereal diseases shall not be admitted, and the impossibility of excluding their after-effects.

The same or a similiar difficulty is found in many hospitals as regards the danger from these patients—which of them are infectious and which are not, is a matter of great uncertainty to the management.

The disease has not been taught as it ought to be. In many of the smaller medical schools, it is difficult to find in their catalogues any evidence that it is taught at all. And when it is taught, emphasis is laid upon its venereal character rather than its characteristics as a chronic and constitutional disease. So even with the most honest institutions on the part of the practitioner it passes unrecognized.

One of the most interesting manifestations of the presence of syphilis in our midst, occurs in connection with the claims for compensation for occupational injuries before the accident board. Whether the syphilis of the employee was alone responsible for the accident, or whether it was a contributary cause—whether the injury contributed to bring into activity a hitherto latent syphilis, are questions which present themselves in wonderful variations—questions which are often incapable of exact solution, and the different opinions of doctors consulted render the solution still more difficult.

Perhaps in no part of the state machinery is the need of more accurate knowledge of this baffling disease more manifest. It is encouraging to note a disposition on the part of this board to thoroughly investigate these cases, and it bids fair to give a distinct impetus to the study of syphilis by our profession and by the general public.

At the State Industrial School for Girls, 50 per cent. have either syphilis or gonorrhea—such was the statement of Mr. Carl Dreyfus a year ago, speaking as one of the trustees of the institution. Unfortunately, for present purposes, such a statement makes it impossible to distinguish between these two diseases. We seem to be justified in assuming that the syphilis was no insignificant part and the particular gravity of the situation lies in the fact that these girls, before being committed by the court, have attended schools or been employed in house-work or as nurse girls—thus coming in contact with the healthier part of the community.

The commission appointed to investigate the white slave traffic in Massachusetts, pointed out the fact that the great majority of prostitutes were the victims of syphilis or gonorrhea or both. The commission started an investigation into the sources of syphilis, occurring in the practice of physicians in the state. This investigation was abandoned as beyond the scope of the commission, but the few figures they gathered, I am permitted to state, indicated, so far as they went, that a large number of the inoculations of syphilis come from other sources than professional prostitutes.

Scanty as these returns are, they allow the inference that the control of prostitution must always fail to control the spread of syphilis. Syphilis is far too widely spread.

In considering these few available figures upon syphilis, it must be remembered that we are dealing with a disease which is purposely hidden, which is never mentioned by name if it is possible to find a synonym or a name of a symptom which may be made a cloak.

In a table of thirty families recently published by the reader, thirty children recognized as syphilitic (usually the first surviving child in the family after a series of fatalities) had been preceded by the death of 86 children at an early age, all or most of whom have died more or less directly from syphilis. In these 86 deaths, syphilis is returned as the cause of death in only two cases.

Its wide-spread distribution through all the different institutions of the state, points to a much larger number of actual cases than are represented by any available figures.

An actual census of cases is hardly at present, to be hoped for, but means of gaining better knowledge is certainly within our reach.

This paper has shown us that it is very widely scattered—that it is a serious menace to public health—that it deserves our serious attention.

It is proper to add that it ought not longer to be allowed to spread, without some attempt to check it. We have the means of controlling it very largely and we are not using as we should these means.

II.

Syphilis of the Eye in Hereditary Syphilis.

By George S. Derby, M.D., Boston.

In hereditary syphilis we may have many diverse affections of eyeball and its accessories, keratitis, iritis, cyclitis, choroiditis, retinitis and optic neuritis, together with various paralyses of the extra- and intraocular musculature. The limited time at my disposal, however, I propose to devote entirely to the commonest and most significant pathological process that affects the eye, and which is known as interstitial keratitis (also called parenchymatous keratitis by the German-speaking people), one of Hutchinson's famous triad of signs.

Interstitial keratitis begins out of a clear sky by the patient complaining of photophobia and lacrimation of one eye. If we make an examination, we will see a more or less diffuse injection of the blood vessels around the corneal border, and usually in one spot there is a deep clouding of the cornea, which on magnification is found to be made up of fine gray and gray-white dots, flecks and lines of varying size and appearance. This opacity advances slowly, usually spreading

across the cornea, although other forms are occasionally observed.

A well developed case of insterstitial keratitis shows a gray or gray-white cornea with a dull stippled surface, the characteristic ground glass appearance. The opacity may often be so dense that the iris and pupil are not at all, or hardly to be seen.

With the beginning of the opacity, or somewhat later, a development of vessels in the affected cornea takes place, which may be so intense as to give a marked salmon pink color to the affected tissue (so-called salmon patch), or so slight as hardly to be detected.

The stage of progression, accompanied according to its severity with a varying degree of watering, photophobia, pain, and the like, may last in mild cases only a couple of weeks, in the more severe cases three to four weeks, and in the very severe two months or even longer. Finally it arrives at its maximum, and then gradually begins to decline. According to the severity of the inflammation goes the involvement of the neighboring structures of the eye. Iritis, irido-cyclitis and chorio-retinitis may involve the eye, even to the point of total and irrecoverable blindness; or the process may be so mild that it is limited entirely to the cornea.

As the inflammation declines, the corneal opacity slowly begins to clear, starting most often in the periphery where the clearing is most complete, and reaching last the corneal center, where some opacity is generally left behind.

Years after the healing of a well-marked interstitial keratitis, although no corneal opacity may apparently be visible, a careful examination with the ophthalmoscope will usually show the faint network of a previous corneal vascularization.

At the height of the disease the vision is always more or less affected, and may be reduced to perception of movements of the hand.

Both eyes are commonly affected, the second generally before the first has cleared. The average interval may be put at six to eight weeks, but wide variations occur. The whole course of the disease takes weeks and months, even up to a year or eighteen months.

In general, it may be said the younger the individual the milder the course of the disease.

One or more recurrences may take place in a percentage of cases variously estimated at from 14 to 22. These may occur in three or four months, and usually between two and ten years after the previous attack has healed, rarely later. the longest interval to my knowledge being thirty-eight years.

Interstitial keratitis does not belong to the commoner of eye diseases, and yet it is certainly not rare. About 90 cases during the twelve months are seen at the Massachusetts Charitable Eye and Ear Infirmary, a clinic of approximately 20,000 new eye cases a year. More general statistics, however, show an average of about one case in every 180. We should remember, however, that in our eye clinics somewhere around one-half of our patients come to the hospital for refraction of the eye, and therefore these cases should be excluded in computing the percentage of disease.

How much damage is done to eyesight by this disease?

I may answer this question specifically by quoting some observations made by Igersheimer on 152 eyes which had undergone interstitial keratitis. Seven of these regained full sight, 27 had 5-10 of normal sight or over, 56 had sight varying between 2- and 3-10. Thus, about 60% of these 152 eyes had sight of considerable practical value.

Of the remainder, 34 could see enough to do coarse work, 23 could get around with difficulty, 5 were blind, 40% were fitted only for the coarsest work or were disabled entirely.

There is a certain amount of relationship between the sight of the two eyes. It was found that, where the disease had been severe enough to reduce the sight of one eye to less than 2-10 of normal, the other eye averaged about the same, was seldom much better, and sometimes worse.

In 71 cases, the earning capacity of 28 was unchanged, while 43 suffered a greater or less diminution.

It should be remembered, also, that subsequent to the disappearance of the disease we have an eye less able to stand the strain imposed on it by modern conditions. The sight is usually more or less diminished by the corneal scars or by the changes produced back of the cornea. In order to see more clearly, the child brings the book closer to the eyes than is normal, and we have an ideal condition present for the development of a myopia, which often reaches high grade.

Many of these children, therefore, must be limited in the use of their eyes, and consequently they are unable to obtain the education that would otherwise have been at their disposal.

I can call to mind a child of parents of moderate means, who, at the age of five developed a well marked interstitial keratitis first in one eye and then in the other. Her sight was reduced in the right eye to 4-10 of normal, in the left to 1-10. Subsequent to the disappearance of the original attack and one recurrence, myopia developed so rapidly that schooling soon had to be largely curtailed; and now at the age of 14 she is entirely dependent for her education on the eyes of others, and will never be able to use her eyes except with the greatest caution.

Interstitial keratitis affects the two sexes equally, and occurs most often in the ages between 5 and 20, occasionally earlier, not infrequently in the third decade, and rarely after 35 years of age. In general, it may be said the younger the patient the more benign is the course of the disease, but that is by no means invariably the case. I can recall from my own

experience several children under ten years of age practically blind as the result of the severe type of the disease which they had suffered from.

Diagnosis. Although my title limits me to diseases of the eye due to hereditary syphilis, a word in regard to interstitial keratitis in general may not be out of place.

Any non-suppurative inflammation which attacks the deeper layers of the cornea may be termed an interstitial or parenchymatous keratitis, and there are a number of diseases which can produce such a process in the cornea. By custom, however, the term has come to designate a process of a certain type, usually easily to be recognized; and it is stated that 70 to 90% of these cases are due to hereditary syphilis, while the remainder are caused by other diseases, chiefly tuberculosis.

I believe that classical interstitial keratitis is always syphilitic in origin, usually on an hereditary basis.

There are, however, a certain number of cases of somewhat atypical appearance where the diagnosis cannot be made on the clinical appearance of the cornea alone without a period of observation. In such cases, the finding of other signs of the disease will at once make the diagnosis reasonably certain.

The point I wish to bring out is this: the diagnosis of interstitial keratitis means now, in the vast majority of cases, a particular ocular inflammation of syphilitic origin. I believe the term should be limited strictly to such a meaning.

Igersheimer, who has devoted much time to this disease, and whose experience covers several hundred cases carefully studied, states that in at least 90 to 95% of primary, untreated interstitial keratitis other signs of syphilitic disease are to be obtained.

On the other hand, it is stated by others that in 40 to 50% of these cases no trace of syphilis can be found. This latter statement was written, however, before the general adoption of the Wassermann test. The truth lies between the two.

The majority of cases show other signs of syphilis; a large majority give a positive Wassermann reaction. It is probably true that the younger the patient the more likely is the Wassermann to be positive. It should be strongly affirmed that a negative test, especially in patients over ten years of age, does not exclude syphilis.

Igersheimer cites, in this relation, an 18-year-old girl with interstitial keratitis at the age of ten years, who at the age of 17 showed a negative Wassermann. At 18 she appeared with a recurrence of the corneal disease, and the Wassermann had become positive.

I believe Dr. Post will bear me out when I state that in a certain small, but definite, percentage of cases the ocular process represents at that period of the patient's life the only demonstrable evidence of his hereditary disease.

The manner of production of hereditary, luetic keratitis is still shrouded in mystery, and pages could be written on the various theories which have been advanced to explain it. Certain facts are of exceeding interest.

The natural assumption would be that it is a direct infection of the cornea by the spirocheta pallida. This view is supported by the fact that interstitial keratitis of a somewhat atypical variety may affect the fetus in the uterus and also infants soon after birth. In two such cases spirochetae have been found in the diseased cornea.

The injection of syphilitic material has caused interstitial keratitis of a sort in animals. From a ten year old boy with interstitial keratitis Igersheimer was able to demonstrate in a piece of excised corneal tissue a single spirocheta.

Interstitial keratitis is rare in nursing infants, but the spirocheta has often been found in their corneae, and apparently may exist harmlessly there for a considerable time.

In 14 cases of interstitial keratitis Clausen excised pieces of the cornea and was unable to find the organism in any.

Were interstitial keratitis due to direct spirochetal infection, a marked action on the course of the disease would be expected from anti-syphilitic treatment, and this is not the case. Interstitial keratitis is thus laid to disturbance of nutrition of the cornea, to the action of syphilitic toxins, to anaphylaxis, and various other modes of production. The exact mechanism of its production is still uncertain.

Treatment. About the local treatment of interstitial keratitis little need be said. Briefly, it consists in hot applications to the eye, the use of a mydriatic to dilate and to keep the pupil dilated, and the proper shading of the eyes from light. To dilate the pupil and to keep it dilated is of paramount importance and sometimes of the greatest difficulty.

The general treatment of this disease appears to be discouraging, in that little immediate and local benefit from the use of any anti-syphilitic remedy is to be found. Mercury, iodide and salvarsan are all powerless to improve, to any noticeable extent, the condition of the eye. Much was expected of salvarsan, and certain writers report success with it, but general opinion does not bear this out. The disappointing effect, or rather, lack of effect, of remedies on the local process has led many specialists into the mistaken course of omitting general treatment in these cases, or of simply ordering a little iodide in addition to the local measures.

We specialists are apt to become absorbed in our one little corner of medicine, and to fail to realize the broad aspects which many of our patients present.

Interstitial keratitis is one sign of a serious general disease. The treatment of the local

process is but one half of our duty to the patient. It is universally recognized that hereditary syphilis should be treated over a long period. The ocular process is healed long before the general one. Once the need for the skilled services of the eye specialist is over, the child will no longer be brought to the eye clinic and the treatment of the general disease is likely to be cut short.

My thesis is this: Very frequently the ophthalmologist is the first to see these patients. After he has prescribed the appropriate local treatment, he should provide for proper general care that will keep the patient under observation and treatment for years, if necessary, and most important, the parents of the case must be educated to a knowledge of the significance of the disease.

At the Massachusetts Charitable Eye and Ear Infirmary, up to three years ago, the treatment of interstitial keratitis was most unsatisfactory. We were awakening to the fact that we were not doing our duty to a class of patients that certainly deserved our best efforts. We then, through our Social Service, began to place these patients for general treatment in the hands of Dr. Post and Dr. Smith at the Boston Dispensary, and this solution of the problem has been so satisfactory that it has been more and more followed. In 1912 somewhat over 25% of the interstitial keratitis cases were given this treatment, while in 1913 some 66% were so handled.

This experiment has been of benefit not only to the patients themselves, but to the writer and others who have followed these cases. Certain results, I believe, have been achieved by observation of these patients.

The corneal disease is to a slight extent favorably affected. An interstitial keratitis under general anti-syphilitic treatment gets well somewhat sooner than the untreated case. The general condition of the patient is very much improved. The long period of observation makes this evident, whereas it was lacking in the former shorter period.

As to the prevention of the later accompanying lesions of hereditary syphilis, the lesions of the bones, nerves and joints, only observation on many cases over a long period of time will show.

Another point should also be impressed on the specialist. A case of interstitial keratitis is a guide post to a syphilitic focus in the community. Seek out the family and see that all who need treatment are put in the way of getting it. Possibly, a certain number of cases of interstitial keratitis and late lesions of hereditary syphilis may be prevented by improved methods for the discovery of syphilis in children, and early discovery means early treatment.

III.

VASCULAR AND CARDIAC SYPHILIS.

BY GEORGE G. SEARS, M.D., BOSTON.

SYPHILIS, or a synonym, as a name for certain clinical phenomena, has passed its fourth centennial, but syphilis, the disease, its nature and significance, is of comparatively recent discovery, and some of the most important chapters in its history have been written in the past ten years. The proof that it could be transmitted to other animals than man, the finding of its specific organism and a specific blood reaction in its victims, have so stimulated the interest of the profession and made the diagnosis of previous infection in many cases so easy that it would seem almost time to sound a warning that there are other causes for degenerative changes than a pre-existing syphilis. This appears to be particularly true of the special portion of the subject which has been assigned to me this morning.

An understanding of the clinical manifestations of syphilis of the circulatory organs is so dependent on a clear conception of the pathological changes induced by the disease, that a very brief description of the latter may not be out of place. In order to give this the weight of authority, I shall quote freely from Dr. Mallory's recent work on "The Principles of Pathological Histology" without permitting the interruption which the use of quotation marks entails.

Of all organs in the body, from the standpoint of syphilitic infection, the blood vessels are the most important from their wide distribution and their relation to all other specific lesions. The treponemata find their way into the vessels more often through the adventitia than the intima, but both locations are frequently affected at the same time. The media may thus be involved from either or both sides. The intima at one point, or in its whole circumference, may thicken and cause narrowing or complete occlusion of the lumen. The lesion thus produced represents an inflammatory reaction to a mild form of injury. The clinical manifestations depend on the character of the vessel involved, its size, the extent of its involvement, and also on the vascular coat which is most affected. Complete obliteration of the lumen leads to necrosis and the formation of a gumma.

In the veins, if the adventitia bear the brunt of the infection, a periphlebitis results, which often presents a definite clinical picture; but the scanty literature on the subject seems to show that this is more often overlooked than diagnosed. In the cases which have come under my own observation, the arms have been affected quite as often as the legs, but unless checked by treatment, the process may wander from one vein to another until all four extremities may

be involved, and it may even extend to some of the veins of the trunk. The larger vessels feel thickened, hard and beaded, the smaller have the feeling of stiff cords beneath the skin. If superficial, some redness may appear, in the earlier stages, along the course of the veins, which later become blue or purplish in color. Tenderness and pain are common symptoms, and are partly due to the inflamed condition of the vessel walls, and partly to an involvement of the accompanying nerves. The coincident neuritis, in some cases, is responsible for the occurrence of certain sensory disturbances like impaired sensation, or a feeling of numbness or of "pins and needles," which may be so prominent as to mask the underlying condition, and lead to a diagnosis of neuritis. As the lumen of the vessel remains pervious, except possibly in the smaller branches, which may become occluded by the swelling of their walls, edema is absent or present only in a mild degree. Occasionally small reddened nodes appear along the course of the veins, due to the formation of gummata, which resemble somewhat erythema nodosum. In a most striking case of this description, seen a year or two ago, such a diagnosis had been made by the attending physician, and his suspicions were aroused only by the long persistence of the condition. These nodes were present in the forearms and lower portions of the legs. The thickened vessel could be felt either above or below or on both sides of the lesion. Their rapid disappearance under antiluetic treatment cleared the diagnosis.

Specific inflammation of the inner coat of the veins produces the clinical phenomena of a thrombo-phlebitis with all its dangers, but in the cases which I have seen, the pain has usually been less intense and the febrile reaction less marked than in those due to other infections. This form also appears to have a special tendency to wander along the course of the veins and from one branch to another until its nature is recognized and appropriate treatment given.

Syphilitic disease of the arteries may manifest itself by a general arterio-sclerosis, suspicion of its specific nature being more actively aroused the more prematurely it is manifested in the life of the patient. The clinical phenomena are those which are common to the condition, whatever its origin. Of the local lesions special interest attaches to the infection of the aorta from the relationship which it bears to aortic aneurysm. The process may start in the intima or adventitia, most commonly in the former, and it certainly, as a rule, extends to the media, but the attempt to make the presence of a mesaortitis a pathognomonic sign of syphilis has failed. The arch is the portion most commonly involved. The earliest stages necessarily escape detection, but as the disease progresses, the patient may complain of substernal pressure or pain, anginal attacks, breathlessness, etc., but it is difficult to say that such symptoms are due solely to the aortic inflammation, and not in part, at least, to a coincident affection of the heart or its vessels. A broadening of the arch may at times be made out by percussion, but an x-ray examination is often an important aid to diagnosis. Apart from this more general involvement, an acute gummatous endarteritis of a vessel of the arch may lead to perforation of the aorta and sudden death, but the logical result of a specific aortitis is a gradual weakening of the walls and the development of an aneurysm which is now generally recognized as due, in a great majority of cases, if not in all, to lues.

Endocarditis, due to the treponema pallidum, resembles more closely toxic endocarditis than the common forms due to infection. The spirochaetes do not, like bacteria, grow in masses on the surfaces of the valves, but infiltrate the subendothelial connective tissue and produce a slow chronic type of inflammatory reaction with deformity and retraction. Its most common manifestation clinically is in aortic regurgitation, which is more often due to syphilis than to all other causes combined, though to say that 90% of such cases are of specific origin is possibly an exaggeration. The mitral valve may also be infected, at times as an extension downward of the process in the aortic, at times as an independent focus, but such statistical evidence as I have been able to gather, points to some infection other than syphilis, or at least suggests great reserve in diagnosis where the mitral valve alone is involved, and also even when it is combined with an aortic lesion. This is particularly true of cases of mitral stenosis. A murmur due to mitral regurgitation from relative incompetence may, of course, appear in all cases of aortic regurgitation, whatever its origin.

Though the treponemata are often found disseminated through the myocardium in congenital cases, they occur there very infrequently in the acquired form, and except for some broadening of the connective tissue septa, the direct injury produced is not evident, myocardial syphilis being essentially syphilis of its blood vessels. The effect produced depends on the size of the vessel attacked, the extent of the lesion and its locality. An obliterating endarteritis of the smaller branches of the coronary arteries leads to necrosis and the formation of a gumma, which in its evolution produces fibrous myocarditis, which, if extensive enough, may go on to cardiac aneurysm. Gummata particularly affect the septum between the auricles and ventricles. From their position they may interfere with the conductivity of the muscular fibres and disturb the mechanism regulating the heart beat. A tiny gumma in the bundle of His is often the cause of heart block. Invasion of the coronary arteries themselves or of their larger branches, either as a localized or more general process, may interfere with the nutrition of the myocardium and produce a chain of symptoms due to myocardial weakness, or provoke attacks of angina pectoris which are often the most striking clinical manifestations of coronary syphilis, and may

occur even when the branch attacked is no greater than that of the third grade. Cases of angina which originate under the age of forty-five are strongly suggestive of syphilis.

The diagnosis of specific cardiac disease is largely presumptive. A previous history of lues, the presence of a Wassermann reaction, or of symptoms of some nervous affection recognized as specific in origin, demands careful consideration of the possible influence of the disease in producing the cardiac symptoms of which the patient complains, but their absence does not exclude syphilis. An antecedent specific infection gives no protection against other causes of cardiac disease, but diagnosis becomes easier if other causes can be excluded.

The interval of time between infection and the beginning of symptoms may help, for, excepting the signs of cardiac disturbance which may appear during the secondary stage analogous to those occurring in other infections, they come on with extreme rarity inside of three years, and the interval is usually much longer. Premature arterio-sclerosis, not otherwise accounted for, or attacks of angina pectoris coming on before the age of 45, point strongly to a specific origin, but syphilitic angina may come on at any age. One of the most satisfactory cases of the latter which I have had occasion to treat, occurred in a man well over 70 who had innocently acquired the disease seven or eight years before. Heart block is so frequently due to the disease that one's suspicions should always be aroused. In aortic regurgitation the weight of evidence favors the presence of syphilis.

No symptoms of syphilitic cardiac disease are pathognomonic, nor are there any which may not appear in affections of the same portion of the heart due to other causes, though a very striking feature of some of the cases which have come under my own observation has been the sudden onset, in the midst of apparent good health, of severe cardiac symptoms, and even sudden death, as the result of some strenuous exertion. Even if a positive diagnosis cannot be made, the importance of inaugurating treatment early is so great that a probability, perhaps even a possibility, of the symptoms which the patients present being due to syphilis, should be met by active antiluetic medication controlled by the Wassermann reaction, though not to the exclusion of one's clinical common sense.

If one studies the results of treatment from the purely statistical side, they are disappointing. The recognition of the importance of syphilis as a cause of cardiac disease is of so recent date, and the dissemination of this knowledge through the ranks of the profession so slow, that before a diagnosis is made, a large proportion of the cases have passed beyond the stage where hope of material benefit remains. The evolution of the specific lesion has already gone on to the production of connective tissue which we are powerless to influence. How can we expect to reduce a well established aneurysm, to render pervious a coronary artery blocked by organized tissue, to make soft and pliable a contracted aortic valve, or to restore its contractility to a fibrotic patch in the myocaridum? In these neglected cases the most which treatment can accomplish is the prevention of a further advance. The hope of the patient lies in early diagnosis for then most satisfactory results may be obtained. Iodides and mercurials should be used with thoroughness and persistence, but also with care, since their overzealous employment may do more harm than good. Salvarsan has a distinct place in the therapy of syphilitic cardiac disease. Frequent warnings have been given of its dangers, but these should not prevent its employment in properly selected cases. Small and repeated doses should be the rule. The only instance in my experience in which alarming symptoms followed its use was in the late stages of mitral stenosis, where, in my opinion, it should never have been used, since no benefit could be hoped from it and the patient's condition was such that no risk was warranted. It has also proved valuable in certain patients with cardiac symptoms due to lesions undoubtedly arising from other causes than syphilis since they were present before the syphilitic infection occurred. The improvement in the patient's general condition following its use enabled the weakened myocardium once more to successfully take up its burden.

IV.

PRIMARY SYPHILIS OF THE TONSIL.

BY C. MORTON SMITH, M.D., BOSTON.

In 1852 Velpeau wrote it seemed impossible for a primary lesion of syphilis to develop in the tonsil.

In 1858 Fournier tabulated the site of all the chancres occurring in a service of Ricord. Of 471 primary lesions found in 15 different localities, not a case was seen where the primary sore was situated in the throat. However, he later published a series of 77 chancres of the mouth, among which was one case of primary syphilis of the tonsil.

The following year, Rollett recorded four cases of this sort. Diday, in 1861, published four cases of positive primary of the tonsil and four others where the retrospective diagnosis was the same without a doubt. To him really belongs the credit of pointing out the practical importance of primaries of the tonsil, so far as I am able to learn.

For the next two decades, little mention is made of this class of inoculations. Various authors from time to time reported an occasional instance. Mauriac in 1883, and Legendre in 1884, published some extended observations on this route of infection, which was then being

recognized more frequently, and they considered that, aside from primary lesions of the lips, chancre of the tonsil is the most frequent of the mouth initial lesions.

Donaldson in 1885 wrote an excellent article on this subject, with the report of a case and gave a list of recorded observations up to that time. He states that "theoretically, tonsil chancre should be more common among women than among men," and in confirmation of this idea quotes Morrell McKenzie's seven cases, six of whom were women. Kissing, he gives as a frequent mode of infection and mentions disgusting practices in a way that leads one to consider them a frequent means of tonsil inoculation.

The writer's observations are not in accord with the greater frequency in women, and in no case has there been a suspicion of indecent practices.

Diday and Denos did not find chancres of the tonsil less frequent in men.

In 1887, Nevet published a list of 338 cases of primary lesions of lips, tongue, tonsils, mouth and throat, seen in Fournier's clinic the preceding year; of this number 29 were primary syphilis of the tonsils—23 males and 6 females. In this series, lip, tongue, tonsils, were the order of frequency, and the more than 3 to 1 proportion in men, is interesting, as its testimony, given nearly 30 years ago, is in accord with the writer's observations, that an equal or greater proportion occur in men, a fact that fails to support Osler's statement in his latest text-book, that "mouth and tonsillar sores result as a rule, from improper practices." Ferro in 1897 quoted the above figures and stated that such practices played a very slight part in the etiology of primary syphilis of the tonsil, and gives as his belief that kissing is really the most important method of infection in this class of cases. To this should be added the over-crowding in poor homes, with the too intimate use of drinking cups and eating utensils, smoking one another's pipe, etc.

The public cigar cutter must be a source of danger, as many men have the habit of moistening the tip of the cigar in the mouth, before inserting it in the cutter. Cigar and cigarette stubs, picked up and smoked soon after being thrown away by syphilitics, have been accused. Hard candy and troches which had recently been in the mouth of a syphilitic are given as a cause, and the attendant of a luetic baby has been infected while testing the temperature of the milk in the bottle, by putting the nipple in her mouth. Small epidemics have been reported among glass blowers, from using a common blowpipe, now no longer permitted.

Bulkley, in 1893, reported 2000 cases of syphilis from his private practice; in many nothing was known of the primary lesion. However, 111 were positively extra-genital infections, of which 15 were primary of the tonsils, 8 males and 7 females.

Fournier was inclined to place tonsils second only to lips in frequency of mouth chancres.

Boeck, of Norway, considered the tonsil the most common site of extra-genital primaries. In his country, among the poor, he thought it due to their manner of living, *e.g.* one spoon doing duty for several persons.

There can be little doubt that the frequency of chancre of the tonsil is due largely to the location and anatomical structure of the tonsil. The spirochetes, carried past the lips and tongue, easily lodge in the crypts and follicles of the tonsil, where an almost ideal spot is found for their development and subsequent invasion of the entire system.

Why the chancre develops more often on the right than on the left tonsil, apparently remains unexplained. Our table shows right 14, left 8, and 3 cases showed both tonsils involved. Of Bulkley's 15 cases, 9 were right, 3 left, and in 3 both were affected.

Most cases give a history of sore throat as the first symptom. With some the pain is intense, in others, slight or lacking. It is apparently not dependent upon the amount of swelling or ulceration in or about the tonsil, but due to the chancre itself.

Patients with such primaries are said to have a bad facial expression, with yellow skin and drawn features, loss of appetite and perhaps some vertigo. Swallowing is difficult and painful, and even ices are not agreeable.

Fournier gives the following important diagnostic signs:—

1. Unilateral occurrence.
2. Persistence of sore throat.
3. Induration.
4. Character of glandular enlargement.

A consideration of these signs should make the diagnosis of chancre of the tonsil fairly easy, provided one thinks of such a possibility.

These inoculations occur most often in young adults. Before spirochetes were known or the Wassermann test was available, an immediate diagnosis was well nigh impossible in individuals past middle life, where the possibility of cancer had to be excluded.

The importance of primary syphilis of the tonsil is not so much its frequency as the possibility of its passing unsuspected by the patient and unrecognized by the physician. In either case, both the individual and the community may suffer from the lack of prompt recognition.

One should always look with suspicion on a sore throat that has lasted over two weeks, does not respond to treatment of simple angina, and is accompanied by pronounced glandular enlargement on one side only. Many physicians have failed to recognize or interpret the importance of this sign, which explains why the satellite bubo of tonsil chancre has been incised for cervical abscess and no pus found, or mistaken for tuberculous glands and carefully excised.

Like primary lesions elsewhere, the uncomplicated process is constructive rather than destructive, and early in its course takes on a distinct induration. Both the size and hardness have considerable variation. The surface of the tonsil is usually only eroded or superficially ulcerated, but may be phagedenic or gangrenous, in which case there is an offensive odor. In many cases, a whitish or greyish false membrane is present, and before cultural diagnosis of diphtheria was possible, such cases were not infrequently mistaken for diphtheria. Fever is usually present, the afternoon temperature being 100° or 101.°

At the end of a week or ten days, the lymph glands under the angle of the jaw or beneath the sterno-cleido-mastoid muscle, on the affected side, undergo a non-inflammatory enlargement. This is the satellite bubo, which is usually larger and more painful than when occurring in the groins.

There is no reddening or involvement of the skin, but the mass takes on a smooth, brawny pork-like hardness without suppuration. This glandular reaction is of the greatest diagnostic importance, beginning soon after the appearance of the primary lesion; its peculiar characteristics remain until the second stage of the disease is well established. In the differential diagnosis one has to consider: cancer, late syphilis, abscess of the tonsil, and perhaps diphtheria and Vincent's angina. There is no more important symptom in this connection than the behavior of the neighboring lymph glands, always showing an early enlargement in chancre of the tonsil. In fact it is at times the swollen gland that first attracts the attention of the patient, and to the physician it should serve as the finger pointing to an existing or healed initial lesion, from which a retrospective diagnosis of primary syphilis of the tonsil is possible, thereby solving an occasional troublesome problem, viz., acquired syphilis without history of initial lesion, and no evidence of genital sores.

It is sometimes difficult to distinguish between chancre of the tonsil and tonsillar abscess during the first week or ten days. However, in abscess the onset is sharper, pain more severe and extends to the neck or shoots into the ear. Not only the glands and periglandular tissue, but the muscles of the neck are involved, and not only swallowing, but motion of head and neck, are painful. Chills, fever, headache, backache and general malaise are among the early symptoms of abscess and are much less or absent in chancre.

Ferro called attention to a valuable diagnostic sign which he had not seen mentioned in other works, viz., in abscess the patient opens his mouth with great difficulty so that it is almost impossible to get a good view of the tonsils and digital exploration is likewise unsatisfactory; when this can be done there may be a sense of fluctuation which is not present with chancre. In the latter there is no limitation of motion of the neck or difficulty with the visual or digital exploration, both of which should be carefully employed.

The difference in glandular reaction has been noted. Our cases show:—

SEX.		DIAGNOSIS.		LOCATION.		AGE.
Male	23	Positive	32	Right tonsil	14	From
Female	21	Probable	12	Left tonsil	8	3 years
						to
	—		—	Both tonsils	3	55 years
Total	44	Total	44	Not stated	19	
					—	
				Total	44	

OCCUPATION.

Unknown	15	Physician	1
Housewife	6	Order clerk	1
School	5	Clerk	1
Waitress	2	Lineman	1
Factory hand	2	Chauffeur	1
Dressmaker	1	Machinist	1
Foundry worker	1	Policeman	1
Cigarmaker	1	Traveling salesman	1
Conductor	1		—
Prison guard	1		
Matron	1		44

Glands do not enlarge in late syphilis and are only involved in cancer after the lapse of several months. In diphtheria and Vincent's angina if there is glandular reaction, it is slight, but inflammatory. Smears from Vincent's either stained or with the dark-field, usually show fusiform bacilli and coarse thick spirochetes in abundance.

In examining mouth lesions for spirocheta pallida, one must constantly bear in mind the close resemblance between the pallida and the dentium. Morphologically, the latter are thicker usually, shorter, and the spirals are less uniform and coarser. In cultures, the dentium always produces odor, the pallida never.

It was formerly difficult to make a diagnosis of chancre of the tonsil during the first few weeks of its existence. The methods of precision now available should make an early diagnosis possible in a large proportion of cases. Beyond the primary stage, there is no peculiarity in the course of syphilis beginning in the tonsil.

Bulkley felt these infections ran a more severe course. Fournier, on the other hand, states clearly that these individuals are liable to the same complications that occur in syphilis in general; neither the location of the point of entrance nor the method of infection has anything to do with the subsequent manifestations; syphilis, like vaccination, runs its course unaffected by the site of inoculation.

CASE 1. Age 28, domestic, noticed a sore throat, which was soon followed by a marked swelling of the gland under the angle of the jaw. She was treated at a hospital, where the swelling was considered an abscess and freely incised, but no pus found. The roseola devel-

oped while she was still in the hospital, recovering from the unnecessary operation.

2. John J., a young man of 30, had an amputation of the thigh five years before for tuberculosis of the knee joint. His handicapped condition compelled him to accept a minor position, with many other employees, where a common drinking cup was then allowed. On May 30 he noticed a sore throat, some weeks later he consulted a doctor, who gave him "yellow pills," which he discontinued in a few weeks, on being told by his dentist that he was taking mercury. His sore throat persisted; a month later he consulted his surgeon, who had just returned from an extended vacation. The surgeon diagnosed these glands as another manifestation of tuberculosis, and advised operation which was accepted. Just before ether was given, the patient called attention to a sparse, small papular eruption over chest and abdomen, and the surgeon remarked that had he not known the patient so well he should think his eruption was syphilis. He then proceeded to make a most careful dissection of all the cervical glands. As soon as possible, after the operation, the patient was sent to a farm in the country to recuperate on good food and fresh air. Throat lesions and enlarged glands were all considered a further manifestation of his old tuberculosis. Four months in the country failed to improve matters and he returned to a laryngologist, who recognized his syphilis and later the problem was solved. He had primary syphilis of the tonsil and his satellite bubo had been excised for tuberculosis.

Syphilis in his case was not unthought of, but the failure to find a genital sore in a man known to have had joint tuberculosis caused the error in diagnosis, resulting in a needless operation.

3. A young man was taken with severe headache, backache and sore throat, especially the right tonsil, on which he noticed a whitish patch, and sent for the family doctor. Cultures were taken which showed streptococci but no diphtheria organisms, whereupon streptococci vaccine was given for four successive days. The gland under the angle of the right jaw showed a hard painless swelling. On the fourth day of his illness, patient noticed a small papular eruption on forehead and chest, which at first was considered in some way the result of the opsonic treatment.

The eruption persisted, and recalling the initial headache and backache, the physician became apprehensive of smallpox. A conference with the local health department was held, and an expert from the state board was called. After three visits it was declared a case of smallpox and the patient was sent to the isolation room of a smallpox hospital, where the physician in charge, recognizing that it was not a case of variola, said he would have had no hesitation in calling it syphilis if he could have found the remains of a genital sore. The enlarged gland in the neck pointed to the tonsil as the site of infection and the puzzle was solved.

These cases are not quoted in criticism, but simply to emphasize the important part the tonsil plays as a port of entry in extra-genital syphilis.

V.

Syphilis of the Lung.

By E. A. Burnham, M.D., Boston.

Although the supposed infrequency of pulmonary involvement in syphilis has made it well nigh neglected in the differential diagnosis of diseases of the lungs, it can confidently be asserted that far too little care has been exercised in studying many doubtful conditions in the chest cavity. Dieulefoy in his Text-book of Medicine, is the only author whom I have found who pays special attention to the characteristics and diagnosis of this condition. Osler observed only twelve cases in twenty-eight hundred autopsies at Johns Hopkins, but reports show clearly that syphilis of the lung apparently completely heals, and, therefore, might show no pathological findings at autopsy.

During the last few years several articles have appeared in the medical journals, and these, together with case reports of such men as Fournier, Giraudeau, Dieulefoy, Panas, Lancereaux and many others, cannot but convince us that many cases have been overlooked.

In its early stages syphilis produces acute pulmonary conditions like bronchitis and bronchopneumonia, but its most frequent occurrence is in the tertiary stage when its lesions produce physical signs which are identical with those of pulmonary tuberculosis. Both diseases produce infiltration and softening of pulmonary tissue and are characterized by dullness on percussion, increased tactile and vocal fremitus, bronchovesicular breathing, and fine moist râles. Certain of the objective signs are somewhat dissimilar. The cough may be as severe, and the expectoration as profuse in one as in the other. Hemoptysis is much more frequent in tuberculosis although blood-tinged sputum is not uncommon in syphilis. The temperature curve in syphilis is not so variable as in tuberculosis and the loss of flesh and strength are not so rapid and marked. The patient with syphilis of the lung does not appear as sick as the one with tubercle infection of the same extent. Nothing definite can be determined by the location of the disease. While the middle and upper portions of the lung are often involved in syphilis, the majority of these cases which I have observed have shown lesions in the lower lobes.

In syphilis, of course, there are no tubercle bacilli in the sputum and this fact, established after repeated careful examinations, together with the presence of any of the stigmata of

syphilis such as Hutchinson's teeth, interstitial keratitis, periostitis of the tibia, and especially with a positive Wassermann reaction, should make a diagnosis almost beyond question of a doubt.

True it is both syphilis and tuberculosis can exist in the same patient, and at least one case has come under my observation where the patient showed tubercle bacilli in the sputum, and also gave a positive Wassermann reaction.

It is the disposition of these cases that makes their recognition of such great importance. It is a serious error to commit a patient with lung syphilis to a sanatorium for the treatment of tuberculosis, and the object of this paper is to put us on our guard lest we overlook a condition which can be easily treated at home and with the most gratifying results. In such cases there should be no question as to the line of treatment to pursue and our examinations should be thorough enough to establish a diagnosis differentiating the two conditions.

Of several cases with which I am familiar I will report one only which will illustrate the errors into which we may easily fall, and which I believe have been more frequent than commonly supposed.

On February 15, 1913, E. H., a robust female aged 29, presented herself for examination, complaining of severe cough, especially at night, profuse expectoration, and pain in the left side of the chest during the last two weeks. She is married, the mother of one healthy child. Her husband is living and well, and there is nothing in her family history bearing upon the present sickness. She denies having had venereal disease. A tuberculous person is said to have died in the apartment in which she lives.

At this time her temperature was 101.2; pulse 128; respiration 36; weight 147½. One of our best phthisiologists examined her, finding sibilant and sonorous râles in the upper parts of both lungs, with fine moist râles at both bases. A diagnosis of acute bronchitis was made and the case marked "for observation." Nine days later she returned and the same examiner reports, many moist râles above and below left clavicle; respiration broncho-vesicular and diminished at left. Resonance poor at both tops. At left base moist râles. Her temperature was 99; pulse 96; respiration 24. She was marked as a "very suspicious case." On March 3d her temperature was 101; pulse 118; respiration 30. The signs persisting at the left top, a diagnosis of pulmonary tuberculosis was made, and application for admission to the state sanatorium made. The case was also reported to the board of health.

Examination of the sputum on March 3d and 12th did not show tubercle bacilli. On March 17th the cough was still bad, there were moist râles at the left top and also at the left base. Her temperature was 100; pulse 104; respiration 28; weight 140½, a loss of seven pounds since first seen one month ago. The sputum on March 20th again showed no tubercle bacilli. On April 8th she was admitted to the state sanatorium where she stayed until May 29th when she left against advice. The diagnosis at the sanatorium was "advanced tuberculosis." On June 4th the sputum was again negative, but another examiner makes her a third-stage case. In August another institution made a diagnosis of second-stage tuberculosis. On December 3d I first saw her and found the same signs of pulmonary infiltration and moist râles as heretofore noted. I also noticed that the bridge of the nose was flat and a foul odor from the nose. An examination of the blood showed a double plus Wassermann reaction. She was given protoiodide of mercury one-sixth grain four times daily. The cough stopped almost immediately, she made very rapid improvement in every way and the record of January 7, 1914, says that she feels quite well, and sees no reason why she should return for further treatment.

This report is presented in no spirit of exaltation but as indicating in the most forceful manner the following conclusions:

1. Syphilis produces in the lung pathological changes which in turn produce symptoms and physical signs which are identical with those produced by pulmonary tuberculosis.
2. That the two conditions are confounded by our most skilled diagnosticians.
3. That great injustice is done the patient and great suffering often inflicted upon his family by sending cases with lung syphilis to tuberculosis sanatoria.
4. That greater care must be exercised in differentiating the two conditions, and especially those cases where there are signs of infiltration and open lesions in which tubercle bacilli cannot be demonstrated.

VI.

THE RELATION OF SYPHILIS TO INTERNAL MEDICINE.

BY DAVID L. EDSALL, M.D., BOSTON.

THE title that has been given me permits me to make some general observations and I will first note the results of the recent large experience in Wassermann reactions in the medical wards that we have had at the Massachusetts General Hospital. These are of interest because they are large in number and during the period in which they were done, the reaction was carried out in a very large proportion of all cases admitted, even though they showed no signs of syphilis. Hence, they throw light upon the extent of the importance of syphilis in relation to a group of unchosen medical cases.

Between January 1, 1913, and May, 1914, there were admitted 2347 cases to the medical wards. In 1696 of these a Wassermann reaction was done. The reaction was not done in 651, slightly over 32%; 159 of the 1696 cases in which the test was done gave a distinctly positive reaction, 45 were doubtful, the latter meaning, as a rule, that the reaction was positive to one antigen but not to another.

A very large proportion of these latter were un-

doubtedly positive reactions from the nature of the case alone, but it is not possible to say exactly how many.

It is highly probable that a number of cases not tested would have given positive reactions and not improbably this number would somewhere near balance the cases that gave doubtful reactions but were not syphilis. Of the total number of cases then, including even those in which no test was done, 8.7% reacted, and 6.7% gave a definite reaction. Of the cases in which a test was done, 12% reacted and 9.4% gave a perfectly definite reaction.

All such statistics are subject to error and of course not every Wassermann reaction means absolutely that the patient has syphilis, but we may fairly say that about 8% to 10% of the cases admitted during this time to our service either definitely had syphilis or had signs which made it impossible to exclude this disease. These figures show clearly the very great importance of the disease in ordinary medical diagnosis in hospitals. They do not at all indicate its frequency in the general public of course but they indicate the general importance of it in hospitals. Of course in a hospital in which a larger proportion of human wrecks is received the proportion of reactions would be larger and in some hospitals the proportion would be smaller. The figures are, I would emphasize again, only approximate in their value but they are significant.

Now, as to the general character of these cases —the largest group had chiefly cardio-vascular manifestations of disease. There were 45 in this group. I have excluded those cases in which the cardiac disease was apparently of the ordinary infectious type of chronic valvulitis, even though a few of these did give Wassermann reactions, and even though syphilis probably had a rôle of some importance in causing the cardiac breakdown. In the 45, I have included only cases of aneurysm, aortitis and aortic regurgitation, myocardial degeneration and arteriosclerosis, in which syphilis was probably the dominating or a very important factor. These figures indicate how important the disease is in producing circulatory breakdowns and how important the circulatory system is as compared with other organs in considering the effect of syphilis.

The next largest definite group was syphilis of the central nervous system of which there were 33 cases. These figures, of course, would have been much larger in a hospital receiving into its wards a larger proportion of nervous cases than we do but they are fairly indicative of its importance in the general run of medical cases. Of these cases 18 were definitely tabes and 15 were put down under other or less definite diagnosis, some being probable tabes, others general paresis and irregular forms of central nervous syphilis.

The most striking fact brought out by our figures, however, and one that is entirely in consonance with the experience of other clinics elsewhere, is the much greater frequency of gastro-intestinal manifestations of syphilis than we have thought until very recent years. I would emphasize the fact that I say gastro-intestinal manifestations rather than gastro-intestinal syphilis, for in the largest and most important group of cases under this heading, the disease is not in the gastro-intestinal tract but in the central nervous system. But these cases may properly from a clinical standpoint, be discussed under this heading because the manifestations are so strikingly gastro-intestinal in character, and the mistakes in diagnosis that are likely to occur in this group are very serious, may readily lead to very erroneous treatment and are due to the fact that the symptoms are of gastro-intestinal character, and if it were once recognized that the patient had syphilis, the most important step would already be taken toward recognising the fact that the symptoms are probably due to the syphilis and probably of central nervous origin. We have long known, of course, that so-called gastric crises not infrequently occur in central nervous disease, particularly in tabes dorsalis, but there are several points that we have by no means clearly recognized until very recently. The first of these is that these cases are distinctly more frequent than we have thought and have evidently often been erroneously diagnosed. The second point is directly related to this, namely, much more frequently than we have thought gastro-intestinal symptoms may be present and may be very marked in the entire absence of any of the ordinary clinical signs of central nervous syphilis or when such signs are so very slight that they would be neglected were it not for our recent recognition of the frequency and importance of the manifestations in the digestive tract. The third point of importance is that the Wassermann reaction in the blood in these cases is very often negative but we have now in the examination of the spinal fluid a method by which we may very frequently make the diagnosis with a large degree of certainty even though all, or nearly all, other symptoms are absent, that is, even with a negative blood Wassermann, we may get a positive Wassermann with the spinal fluid and the cell count of this fluid and the colloidal gold reaction are extremely important and a strongly positive Noguchi reaction is also of importance.

We had during the time that I mentioned, 15 cases in the wards, which were either admitted with a diagnosis of gastro-intestinal disease or were given that diagnosis after entrance to the ward, in which subsequent examination showed that the case was one of central nervous syphilis. In nearly all of these the diagnosis was difficult and in some cases extremely so. In 11 the symptoms were those of either gastric or duodenal ulcer or gastric cancer; in four the symptoms strongly suggested malignant disease of the colon. The difficulty in diagnosis is shown by the fact that three of the cases with gastric symptoms and one case with colonic symptoms were operated upon after very careful study under

the impression that they had severe local disease of the parts mentioned but nothing was found at operation. These were earlier cases. In the last few months we have not made this mistake, but nevertheless the difficulty is such that we are very likely occasionally to repeat the error. The important point about these cases is to look sharply in all instances that suggest severe gastro-intestinal disease, particularly those with pain, but also in other cases, for evidences of syphilis and especially for even slight evidences of central nervous disease, and if the diagnosis appears at all doubtful to make a spinal puncture and examine the spinal fluid, at least before subjecting the patient to a severe operation unless there is some very definite reason for not doing this. Without spinal puncture, some cases are pretty certain in occasional instances to be mistaken anyway.

A striking instance of the ease with which this error can occur, a case, however, in which operation was not carried out was that of a man on the West Medical Service who had periodic vomiting beginning in 1909 and who first entered hospital in 1911 and after careful examination showed no central nervous symptoms. The blood Wassermann was negative, and he appeared to be probably neurotic. The spinal fluid was not then being examined. He entered again in April, 1913, having had the attacks repeatedly and in worse form but still without any pain or other symptoms excepting for very slight pain in the region of the left knee at very rare intervals. He still had no physical signs of central nervous disease on thorough examination but while the blood Wassermann was still negative the spinal fluid showed a positive Wassermann reaction, a high cell count and a positive Noguchi. He improved after treatment. The cases with symptoms suggesting disease of the colon were extremely interesting and confusing. In one it was possible even to feel apparently definite masses in the region of the colon and all his symptoms indicated severe increasing obstruction and the x-ray appeared to confirm this entirely. Operation showed nothing. This man had rather sluggish reaction of the pupils and no knee-jerks but his nervous symptoms were so slight and his colonic symptoms so very striking that it was still believed that he had disease of the colon and he was operated upon with negative results.

One point that must be kept in mind is that we are too prone to think of these gastro-intestinal manifestations of central nervous syphilis as having so-called critical or periodic attacks of symptoms. Many of the cases, particularly those that resemble gastric or duodenal ulcer or gastric cancer, have slight, if any, exacerbations of their symptoms in any critical form but rather present distress more or less constantly, thus more closely simulating persistent local organic disease.

Another very important fact that we have learned is that syphilis of the stomach itself is much more frequent than was earlier thought. We had eight, probably nine cases in which it was reasonably clear that severe local disease of the stomach was syphilitic. Three of these were diffuse disease of the stomach, producing a very extraordinary infiltration. The others were chiefly ulcers. It is now reasonably clear that any very large ulceration of the stomach, particularly when situated fairly high up on the stomach, and especially when it has undergone such infiltration and contraction as to have produced an hour-glass contraction should be sharply suggestive of syphilis, because so large a proportion of such cases are syphilitic.

There are certain other points about the gastro-intestinal tract that need emphasis in relation to syphilis. Four cases were in the wards under a diagnosis of cancer of the stomach in which there proved to be apparently no disease of the stomach but in which the condition was entirely due to syphilis. In three the exact nature was doubtful but the symptoms were abdominal; in one it was a syphilitic hepatitis. In all treatment cleared up the symptoms. There was another case in which there were symptoms of chronic colitis which appeared to be in part at least due to syphilis of the bowel, if the effect of treatment and a positive Wassermann reaction may be trusted.

There were 12 cases of cirrhosis of the liver with positive Wassermann reactions. Just what is the relation of syphilis to what we clinically call ordinary cirrhosis of the liver is not definitely clear nor has there been any final working out pathologically of the relation between syphilis and ordinary cirrhosis. It appears very probable that syphilis plays a much larger rôle in this than is generally recognized and I believe many pathologists suspect this also. The importance of hepatitis with gumma formation is of course, perfectly clear. One point I would emphasize in regard to these latter cases —I have seen several instances in which the diagnosis between diffuse syphilitic disease of the liver with gumma formation and abscess of the liver was by no means easy. One of these for example was a man who had been in the tropics, had had dysentery and had an enlarged liver with a dome-like projection upward, with pain, fever, leucocytosis and even a right-sided pleural effusion. It all cleared up with the utmost speed after the administration of salvarsan.

There were six cases that presented the symptoms of gall-stones or pancreatic disease, that had positive Wassermann reactions and in which all definite evidence of gall-bladder or pancreatic disease was absent. In all of them a strong suspicion remained at the end that the condition was due to syphilis. In several of them there were slight symptoms of central nervous disease on ordinary clinical examination and several improved strikingly upon treatment directed toward syphilis.

If we include these various cases that I have mentioned in which the symptoms were abdom-

inal and apparently referable to the digestive tract, we have all told, 46 cases in which the clinical manifestations were digestive. This is a striking fact, as this brings this group up to the point where it is the largest of all, at least in so far as the question of clinical opportunity for error is concerned. It is, however, hardly fair to call it the largest group, because as I have said 15 of these cases were really instances of central nervous disease, not of disease of the digestive tract.

There were eight cases of nephritis with a positive Wassermann reaction. What the relation of the syphilis to the nephritis was is still too confused a question to make it profitable to discuss it here.

There were four cases with very marked splenomegaly as the main manifestation and a number of others in which there was usually marked splenic enlargement in association with liver disease, these cases emphasizing again the important rôle of syphilis in splenomegaly.

There were four cases in which unusually marked intestinal adhesions occurred after operation in persons who had syphilis. These may have no significance but it seems to me perfectly possible that intestinal adhesions may form much more readily in persons with active syphilis than in those who have not this disease, and it indicates the desirability of treating any existing syphilis, even though quiescent, before abdominal operations, unless there is some strong contraindication.

There is another group of cases that I would mention, three of visceroptosis and neurasthenia and three of simple general neurasthenic symptoms, in one of the latter associated with marked inanition. All those with visceroptosis apparently developed their neurasthenic symptoms after the syphilitic infection and in the three cases with debility there was no other explanation of the condition than the syphilis. Some of these improved decidedly after syphilitic treatment. Unquestionably we need to keep sharply in mind the possibility that vague general symptoms may be due to syphilis just as they may be due to other infections such as tuberculosis or a low-grade fecal sepsis.

Finally, I would note that one may at times see the most unusual manifestation of syphilis and may be unable in the end to say what was the matter excepting in general that the patient had syphilis. For instance, a colored man was admitted to the ward with a diagnosis of tuberculous peritonitis and had marked loss of weight. slight irregular fever, vague pains in various parts of the abdomen, a somewhat prominent and boggy feeling abdomen, and did appear to have peritoneal tuberculosis. But he had a positive Wassermann and upon treatment almost immediately got entirely well.

In another case a woman had vomiting, moderate excess of pigmentation of the skin, prostration, low blood pressure and loss of weight. The vomiting was so severe that she had become much exhausted from it after a few days in the wards. The Wassermann reaction having been reported positive and salvarsan administered, she practically immediately recovered and remained well. I suspect she had mild syphilis of the stomach itself. She had no signs of central nervous disease and her recovery was too speedy for that.

All that I have said only emphasizes more emphatically through our recent experience what we have long known, namely, that syphilis is clinically one of the most important things in all medicine, that it manifests itself under the most varied forms, and that we are never safe from error unless we keep it constantly in mind and even then we shall occasionally fall into error in spite of our best efforts.

VII.

What the City Should Do to Control Syphilis.

By Thomas B. Shea, M.D., Boston.

The great progress that has been made in the past few years in the diagnosis and treatment of syphilis leads us to believe that this disease can be brought under control and supervision and with better results than has been accomplished in tuberculosis.

The outlook for the cure and prevention of this disease is more than probable if the good results recently reported attending the use of salvarsan are confirmed by time and experience.

If, by salvarsan, a patient can be sterilized so that he is not a source of danger to others, it is only a question of time before the spread of this disease can be materially diminished.

Every patient that is made free from infection means the removal of one focus of infection from the community.

With our present knowledge, and the methods that have been successfully tried for the diagnosis and cure, the time has arrived when this disease should be controlled the same as other infectious diseases.

In this state, once a disease is declared dangerous to the public health, it is the duty, under the law, for boards of health to furnish hospital accommodations and treatment for indigent patients. If progressive sanitary methods are to prevail for the care of this disease it will be necessary that health departments be furnished with all necessary information concerning cases that are in existence.

The source of infection must be sought out, and this information can be furnished only by the patient.

The first and most necessary step in any campaign against a communicable disease is to know the number of cases, the location of the same,

and whether or not they are a menace to the community.

The law of our state demands before cases must be reported by physicians, that the state board of health declare a disease once dangerous to the public health, and that this condition exists at the present time is a fact well known to physicians and those engaged in the work of preventive medicine.

The same objection to the registration and reporting of these cases will probably be brought forward as was formerly heard on the registration of tuberculosis, viz., physicians will not report their cases, patients will consult irresponsible practitioners for advice and treatment, the disease will be concealed.

About eight years ago the same conditions prevailed as regards tuberculosis as we have today in syphilis. Physicians were not obliged to report cases, no hospital facilities for abandoned and dying cases, no laboratory facilities for diagnosis, and no supervision of cases by nurses and physicians.

That physicians will obey the law has been demonstrated in the past few years as regards tuberculosis. At the present time, in our city, it is rare to have a death reported from tuberculosis without having a complete history of the case on file at our office.

No medical man acquainted, as he must be, with conditions at the present time can furnish or present any valid reason for not reporting these cases. The same system can be adopted as is now being used with such success in tuberculosis.

Cases that are receiving proper care and under the supervision of their own physicians need not be visited or kept under surveillance. Already, many states require, under penalty, the reporting of these cases. The law in some states provides that the reports shall be absolutely confidential, shall not be accessible to the public, nor shall such records be deemed public records.

Many of the states furnish salvarsan, also laboratory facilities, to practitioners for treatment.

Heretofore, the great objection to the control of this disease by health departments has been the long course of the disease.

It was impossible to segregate and treat patients for many years. The question of expense was prohibitive. Variola, diphtheria, scarlet fever, measles and other communicable diseases, with the exception of tuberculosis and leprosy, under the control of health departments, are diseases of short duration and yield readily to treatment.

At the present time there are not sufficient hospital facilities for patients with syphilis who are known to be a danger and menace to the community.

Cases are being called, almost daily, to our attention, which, after being investigated, show that the ignorant or careless patients have infected many individuals. We are unable to take action in many of these cases on account of lack of hospital beds and no legal control of patients.

The duty of a modern and efficient health department is the conservation of public health and the prevention of disease. To know disease and the dangers that may follow infection is one of our great aids in the prevention of disease. Therefore, the public must be educated and shown how much it means to themselves and their children, also the importance of early diagnosis and treatment.

The disease should be fought along the same lines as has been used in tuberculosis. Syphilis should be added to the list of diseases that have been declared dangerous to the public health, and therefore would be reportable; health departments be equipped with laboratory facilities for diagnosis and blood tests to determine condition of patients; there should be supervision of cases; the state furnish salvarsan for treatment, the same as is now being done for diphtheria and meningitis, and patients that are careless and liable to be a source of infection to others to be held in restraint. At the present time an individual that is infected with diphtheria, scarlet fever or any other disease that has been declared dangerous to the public health is quarantined and deprived of his liberty until declared free from infection. If such rigorous methods can be enforced for such diseases, how much more is it the duty of the state and the city, and especially those officials charged with the care of the public health to take charge and control of patients suffering with this disease.

If our public hospitals and clinics are to adopt modern methods in diagnosis and treatment they should be equipped with laboratories and set apart some beds for this disease. A Wassermann survey recently made in some of our large hospitals showed a large number of patients infected and being treated for other diseases.

Many beds now in use for the after-effects of syphilis can be released for other patients if the salvarsan treatment can be established in our hospitals.

This disease should be fought from a health standpoint entirely, and with the same methods that *are* now in use for other infectious diseases. The status and environment of patients should not be considered. All infected persons should be amenable to the regulations made for the protection of the community. The majority of cases are self-acquired and the results are well known to most patients before infection.

To enforce a law or health regulation on any one class or section of a community is bound to be a failure. Public opinion will not support health legislation under such conditions.

It is the duty of the medical profession, acquainted as they are with the results of this disease, to lead the way by educating the public and also advising the proper public officials of the necessity of finding funds for health de-

partments for the care and control of this disease.

DISCUSSION.

DR. FREDERICK T. LORD, Boston: I should like to refer to the diagnosis of syphilis of the lung in connection with Dr. Burnham's paper. Dr. Burnham has mentioned the infrequency with which this condition has been established at autopsy and refers to Dr. Osler's statement that only 12 cases in which lesions believed to be syphilitic were found among 2500 autopsies at the Johns Hopkins Hospital. The infrequency with which *acquired* syphilis of the lung has been recognized is even more striking at the Massachusetts General Hospital, where not a single instance has been established among 3,000 autopsies. Pulmonary changes at the root of the lung are not very uncommon in connection with syphilis of the trachea and bronchi, but their syphilitic character is difficult to establish, and the possibility of secondary changes in this region in consequence of syphilitic tracheo-bronchial stenosis must be taken into consideration. It may be that the apparent disposition of syphilis to affect the region of the root of the lung is due to secondary and non-syphilitic broncho-pulmonary infection. Syphilitic infection of the trachea and bronchi is so much more common than pulmonary syphilis as to suggest the desirability of its exclusion before deciding in clinical cases that the condition is pulmonary syphilis. Tracheo-bronchoscopy may be expected to be of assistance in such cases.

In consideration of the infrequency of syphilis of the lung it seems desirable that the utmost caution be observed in making this diagnosis. Tuberculosis should be rigidly excluded, and it is desirable that not only the sputum be shown to be negative for tubercle bacilli, but also that tuberculin be given by the subcutaneous method and the patient fail to respond to increasing doses up to and including 10 milligrams, in the case of adults. As Dr. Burnham has said, the stigmata of syphilis should be present, including a history of infection, other and coincident manifestations of the disease and a positive Wassermann test. The evidence is cumulative, and even at best tends rather to establish pulmonary syphilis with probability rather than with exactness.

DR. E. O. OTIS, Boston: I would like to say with reference to the tuberculin test in regard to syphilis, that it is a fact that a certain number of cases do respond to a tuberculin test. Whether or not there may be some latent tuberculosis which has been undiscovered, is a question. Probably such is the fact.

In a certain series of investigations which I made some time ago with regard to that same point, I found that out of 35 or 40 cases of pronounced syphilis, the diagnosis having been made in every case by Dr. C. Morton Smith of the skin and syphilis department of the Boston Dispensary, and with no evidence of tuberculosis from physical examination—that there were 17% of reactions from the use of tuberculin.

In the very difficult diagnosis in cases of syphilis of the lung, there is one point which is to be considered, and that is the constitutional symptoms are not as great as they are in tuberculosis for the amount of infiltration in the lung.

When we have a combination of syphilis and tuberculosis, it has been found by various observers that the use of salvarsan is not only beneficial for the syphilis, but also at the same time for the tuberculosis.

Reports of Societies.

AMERICAN SURGICAL ASSOCIATION.

ANNUAL MEETING, HELD IN THE ASTOR HOTEL, NEW YORK CITY, APRIL 9, 10 AND 11, 1914.

The President, DR. WILLIAM J. MAYO, in the chair.

(*Continued from page 389.*)

DISTANT RESULTS OF A SUTURE OF THE HEART FOLLOWING A WOUND BY PISTOL-SHOT.

DR. R. PROUST, Paris, France: On February 20, 1910, being on duty, I was called at 5 o'clock in the afternoon for urgent service at the Trousseau Hospital, in Dr. Savariaud's ward for a wound in the heart, diagnosis made by Messrs. Bloch and de Cumont, internes of the service. After a rather long period of hesitation I have the impression of a progressive aggravation and decide on operation. From the beginning I ascertain as far as possible the traject of the ball. For this, after having traced a cutaneous incision according to Fontan's rule, I lift the skin and soft parts along the border of the sternum, and find the fifth costal cartilage shattered by the ball; I raise it and come across a mass of liquid blood, which bubbles and is animated by beating, I then quickly complete the flap by sectioning the fourth and sixth costal cartilages at their sternal insertion. The turning down outwards of the flap simply by elasticity is quite easy since it is a question of a 13-year old boy. A spurt of blood is produced immediately and I clearly distinguish the wound in the pericardium from which it comes. I enlarge this wound with my scissors, both from the top and the bottom, to an extent of about eight centimeters or about three inches and mark the borders of the serous membranes with forceps after having isolated the operative field. I am thus easily able to explore the pericardiac cavity, but at the level of the basis I see only blood, and cannot distinguish the point of the heart. This is caused by the fact that all the basis of the pericardium is filled with a coagulum as large as the fist, which covers the point of the heart and compresses the heart upwards.

I extract the coagulum, and with it the ball which was free in the pericardium. As soon as the coagulum is taken away the point of the heart ap-

pears freely with its pinkish white color; there is clearly distinguished a wound in the front residing near the left border quite near the point; a jet of blood escapes from it at each systole. I have at my disposal only a curved Reverdin's needle of the current model. It is with this that I quickly make my first stitch which perforated totally the wall of the heart; once knotted it stops the hemorrhage a little, but blood escapes along the thread. From this first stitch I am able to make three others nonperforating, by using this time the small Reverdin's intestine needle. I then turn the heart upwards to look for a second wound on the posterior face, but I find none. But seeing the descendent obliquity of the traject of the ball, I come to the conclusion that it is a tangential wound although a penetrating one.

Suture of the pericardium with separated stitches of catgut No. O; the lowest stitch fixes a very small rubber drain, which is level with the serous membrane and even penetrates into it at a little less than a centimetre.

Operative consequences. The next day, February 21st, there is a considerable thermic reaction. In the morning 39.8° centigrade, that is about 103.6° Fahrenheit, and in the evening 40.4° centigrade, or about 104.8° Fahrenheit. In spite of this the general status is not alarming, the pulse indicates 110. The following days there is a slight fall in the temperature which, however, remains very high. On March 5th Messrs. Proust and Perinaud examine the patient in the evening; the pulse is very undulating, of very feeble tone and indicates 120. The heart beats are exceedingly dull on auscultating, the patient has some trouble in swallowing which has increased since the operation. Briefly, there are evident signs of pericardiac effusion. The small rubber drain, however, produces nothing. It is still solidly fixed in the depth and oscillates with the cardiac movements; I pull it away with a sharp tug and immediately out flows a great abundance of blood-stained serosity which is in no way purulent. The hand which palpates the radial pulse, feels that little by little it puts itself right from this moment. It becomes pronounced, excellent, very strong. From this moment the effervescence begins to cease, and finishes in less than 48 hours. The patient leaves the hospital on March 21, 1910, cured, one month after the operation. Immediately after his departure from the hospital, on March 12, 1910, he was engaged as telegraph messenger at the post office in Paris, and able to return to his normal mode of living. He followed this calling of telegraph messenger during three years, and in spite of the fatigue experienced in climbing long staircases, he did not show any functional cardiac troubles; at the most did he notice, in the beginning, a little panting after hurrying upstairs. Since a year ago he has changed his profession. He is now a bookkeeper and complains of no trouble whatever. I asked him if he would be examined to see if, a long time after operation, our investigation would show, in spite of the total absence of functional disorders, anything abnormal, either at the level of the cardiac suture, properly speaking, or as remains of the pericarditis he had shown. I asked my colleague and friend Dr. Bezancon, chief physician at the Charity Hospital, to be good enough to consult him; Dr. Aubourg, chief of the radiology service at the Boucicault Hospital, to kindly radiograph him; Dr. Bourguignon, chief of the laboratory of electricity at the Salpetriere Hospital, to be kind enough to trace out his pulse, and Dr. Boulle, chief at the Marey Institute, to be kind enough to take his electro-cardiogram.

The auscultation and electro-cardiogram have established that the working of the heart was almost normal. But the point of the heart seems a little too near the sternum and the electro-cardiogram shows a double at the time of the ventricular contraction. The radioscopic examination has shown us very slight modifications consecutive to the sutures. The part of the left ventricle which forms the left border of the heart, presents a normal shape: at the union of the external two-third and the internal one-third of the left border at the height of the fifth rib, is seen a permanent notch, which seems to be a fixed point which does not participate in the beating of the left border. The second part of the examination bears on the esophagus: The patient is placed in an oblique position, in order to distinctly see the clear space which exists between the vertebral column, the aorta and the heart. The patient has absorbed a milk of carbonate of bismuth: the bismuth has designed an esophageal duct of normal aspect as far as the origin of the large vessels. From this place, as far as the diaphragm, that is to say over nearly four inches, we have seen a diminution of size of the duct, which can be estimated at half of the normal calibre. We may, therefore, think that it is a question of lesions of the external tunic, perhaps by adherence to the pericardiac pouch in relation with the auricles.

This examination proves that there incontestably remains some esophageal troubles connected with pericarditis and that, on the other hand, there persists either a slight weakening of the cardiac wall at the level of the scar, or perhaps a pericardial adherence at this level.

THE SURGICAL TREATMENT OF AORTIC ANEURYSM.

PROF. DR. H. KUMMEL, Hamburg: The surgical treatment of aneurysm of the aorta is an indirect and a direct one. To the first group belongs the ligature of the art. subclavia and carotis and the introduction of a spiral wire. The light scratching of the wall with a fine needle, the laying around of a thin aluminum band as Gatsch and others did, strips cut out of the aorta of the animal on trial as was done by Halstead. The direct surgical method I would like to call the way of folding the wall of the aneurysm as Matas and Allen did. Tuffier has, after resection of the left thoracic wall under positive pressure, pinched off the sack of the aneurysm of the aorta thoracica and closed with a double suture of Carrel. I had the opportunity to seize directly an already burst aneurysm of the aorta thoracica, which has not yet been done before. I find no similar case in the literature. A man, 52 years of age, had been infected in New York with lues three years since. Some months ago he came to the medical part of our hospital in Hamburg. The diagnosis was made clinically and radiologically of an aneurysm of the aorta. The patient left the hospital after sometime, improved in health and looks. He returned shortly after looking suddenly reduced and with strange pains in a pulsating tumor of the left side. The patient was thin, complained of severe pains and shortness of breath, occasioned by an immense, prominent tumor going from the left pelvis over the left rib. Aneurysm of the aorta could not be diagnosed even after a

radiographic picture. We tried to keep alive this otherwise lost man by an operation. Our plan was to free the aorta above and below the burst sac, resect the five ribs near to the spine, setting free the aorta extra-pleurally without injuring the pleura. Compression of the aorta by the hand of an assistant. Extension of the cut downwards, setting free and clearing the sac of the aorta filled with thick bloody masses and which was already burst. That we could better overlook the operative field we lengthened the cut downward through the diaphragm retroperitoneally so that the whole aneurysm sac above and below could be perfectly overlooked. From the aneurysm sac we took so much away that a nearly normal lumen was obtained and the 10 cm. wide opening shut by a suture. After taking off the digital pressure still a little bit of blood appeared. A second suture was made then and bleeding stopped. Circulation in both lower extremities was entirely restored and normal. Shutting off the wound the pulse of the patient is comparatively good. He died later of weakness of the heart on account of the reduced state of his health.

Although the patient died, the operation showed that it is possible to be executed without compression apparatus retropleurally and retroperitoneally. In another case of removing a tumor I saw the aortic suture head perfectly. Similar cases are published elsewhere. In the future I will secure the suture by putting a spiral strip of fascia around it and oversewing the wound.

AURICULAR FIBRILLATION FROM TRAUMATISM OCCURRING IN A HEART PREVIOUSLY NORMAL.

DR. GEORGE E. ARMSTRONG, Montreal: The patient was a man 46 years of age, who had been shot in the chest. The bullet entered the fourth intercostal space a little to the left of the left border of the sternum. Fluoroscopically the bullet could be distinctly seen in the pericardium. It was quite free and readily changed its position when the man was rolled from side to side. Tracings showed complete auricular fibrillation. The pulse was irregular and of poor volume. Twelve hours after the bullet had been removed the pulse which had previously been 130 to 140 slowed down to 90 and became quite regular. The tracing taken then showed normal auricular and ventricular contraction. No record has so far been found in literature of a similar case.

THE INTERPLEURAL EXPOSURE OF THE HEART BY MEANS OF LONGITUDINAL SECTION OF THE STERNUM.

PROFESSOR REHN, Frankfort, Germany: Infection of the pleura is the most important factor in the mortality of heart wound; the next most important is the great bleeding during the operation.

The method of operation for heart wounds which I warmly recommend gives the greatest safety since the pleura remains unopened during operation. It also gives us the possibility of immediately controlling the bleeding from the heart in that we can reach both venae cavae and lessen the supply to the heart as desired. In operating the incision is made from the left second chondrosternal articulation to the middle of the xiphoid process, then it follows the left costal arch; the latter incision is deepened, rectus and transversalis abdominis are cut, and the incision continued along the under surface of the costal arch and the sternum above. The finger easily separates the delicate fibres of the diaphragm and enters the mediastinum. The xiphoid process is now either pushed aside or removed. A well-rounded saline sponge is pushed up into the mediastinum. This pad now pushes the pleura out of the way on both sides and ensures the safe splitting of the sternum up to the third or even second chondrosternal articulation. The divided sternum is then forcibly held back by hooks and the pleura protected by gauze. When necessary the pleural folds are retracted by means of the gauze. (Care must be taken not to attempt to retract the pleura with the fingers, as it is easily perforated.) If the thorax is very rigid, the sternum must be divided transversely. The anterior surface of the pericardium is now freely exposed and one can open it as far as desired. The heart is just as easily accessible and the incision offers us an especially good opportunity to compress the venae cavae. After completing the operation the breast-plate section can be readjusted by several bone sutures. The pericardium should be closed by interrupted sutures which should not be taken too closely together, so that any fluid exudate can escape between the sutures. The mediastinal space must be drained and this in the absence of air (elimination of air by the negative pressure in the mediastinum). The space is walled off after a few days, when emphysema of the mediastinum is no longer to be feared. I have now used this method six times with satisfaction. I would consider it applicable if a complicating wound in the thorax subsequently required a wide opening in the pleura.

The indications for the operation are given and two illustrative cases cited.

DISCUSSION.

DR. FRANCIS T. STEWART, Philadelphia: In connection with Dr. Kummel's paper I wish to mention a case of aortorrhaphy. The patient was suffering from vegetative endocarditis and had an embolus lodged at the bifurcation of the abdominal aorta. There was beginning gangrene of the right leg and symptoms of gangrene in the left. The abdomen was opened, the posterior parietal peritoneum split, the aorta compressed between the fingers of an assistant and the embolus dislodged without difficulty. This was several days after impaction of the embolus, and aside from the successful suturing of the vessel is of importance in showing that the embolus was not adherent. The pulse was reëstablished in the lower extremity, but the patient died four days after operation from edema of the lungs as a consequence of the cardiac condition.

In connection with Dr. Armstrong's paper I would mention a patient with a bullet lodged in the fat about the base of the aorta within the pericardium. I operated with the idea that there was a heart wound and found the pericardium moderately filled with fluid, removed the bullet, did not drain the pericardium and the patient recovered.

In connection with Professor Proust's paper, at the last meeting of the American Surgical Association I reported five cases of suture of the heart. Three recovered, and at that time I said that those who were still living, showed no evidence of cardiac degeneration. These patients, I must admit, have not been examined as carefully as Dr. Proust's patients. X-rays have not been made and the electrocardiogram has not been used. One patient ap-

parently well, died at the end of five years. Autopsy showed what Professor Proust pointed out ought to occur, pericardial adhesions, and in that patient, the descending branch of the left coronary artery had been tied at the operation. In the area supplied by this artery there was a marked interstitial myocarditis with dilatation, not so great as to justify the diagnosis of aneurysm, but marked thinning and dilatation.

DR. WILLY MEYER, New York: From what I have seen experimentally I feel that the future of this subject lies in intrathoracic surgery, and not in splitting the sternum. In aneurysm of the aorta, it is due to Dr. Lewis, who has followed the method of introducing a special wire into the aneurysm and treating with electrolysis, that we at this time consider this the best method. The degree of success attendant upon this method does not mean that we have reached the end in treatment. All experiments should be continued and the future will show more radical methods.

DR. HOWARD LILIENTHAL, New York: I would like to call attention to the fact that splitting of the sternum may be followed by the accident of auricular fibrillation. I had a case not long ago in which I split the sternum by the Sauerbruch method down from above and then, carefully splitting the two halves, removed a large intrasternal growth. I have the tracings and the case will soon be published. Inasmuch as this method has been brought before us today, the possibility of this accident should not be overlooked. One of my colleagues found that no case was reported in which auricular fibrillation had been actually observed upon the heart itself in the human subject. Dr. Armstrong is quite right in saying that he is the first to show this pathologic phenomenon.

PROFESSOR CHARLES HENSCHEN, Zurich: For saccular aneurysms of the thoracic aorta in which Tuffier advocated the simple occlusion ligature, the Matas procedure is analogous to an operation. In the fusiform aneurysms of the thoracic aorta I have attempted experimentally the strengthening of the vessel wall by operation in two ways. In one of these the aorta, in segments, is strengthened from without by broad bands consisting of flaps of fascia sewed around it. Our attempts show that these cuffs of fascia make possible an easily healing, mechanically excellent reinforcement of the vessel wall. In the second method tubes of absorbable material (of galatholith) of a calibre corresponding to that of the aorta, and in any case corresponding to the lumen below the damaged area of the vessel, are inserted through a longitudinal cut in the wall of the aorta into the lumen extending through the whole aneurysmal portion. In these inserted tubes oval openings are made to correspond to the origin of the more important vessels in order to permit the free passage of blood. At the lower end of the galatholith tube is bored a circle of round holes which permit the fixation of the tubes by means of interrupted sutures, penetrating through the wall of the aorta. Perhaps a combination of the outer fascial wall reinforcement and the tube method is more to the purpose, although both are in the experimental stage.

DR. HARVEY CUSHING, Boston: Some years ago in Baltimore experiments were undertaken in operations upon the cardiac valves. These were done in a very much more crude manner than the methods employed by Dr. Carrel. The lesions were made by introducing into the heart, either into the apex or into the larger vessels, knife hooks by which we could divide the valves, and it is extraordinary how simple these measures actually are. The character of the lesion was determined by the application over the valve of a phonendoscope so one could tell by the murmur when the lesion desired was brought out. These experiments were chiefly useful in serving as subjects for the class in cardiac studies of physical diagnosis. We were able to accomplish satisfactorily only the insufficiencies of the four valves; the experimental stenoses were much more difficult to produce. With Dr. Carrel's method I doubt not that the stenosis by suturing of the valves in direct apposition can be produced. Recently a patient in the Brigham Hospital with a severe mitral insufficiency, and who finally came in with a complete decompensation, had suddenly in the ward an embolism of the right femoral artery, lodging just at the bifurcation of the profunda femoris. Had my colleagues as much respect for my ability as had Dr. Stewart's for his, we would have been called upon to remove this embolus. The man had a dry gangrene of the lower extremity up to the knee. Amputation was performed and not long after he succumbed to his cardiac lesion. At autopsy nothing was found in the heart, except the familiar button-like slit of the mitral valve. If one could only have put, as was done experimentally, a little knife hook into the apex of the heart, the man's difficult stenosis could have been transferred into an insufficiency, and he at least would have been much better off so far as the function of his heart was concerned. Does Dr. Carrel feel that, although these things are possible upon the normal heart, when disease is present there is any chance that we may be able to clamp the root of the heart or be able to carry out some of these more serious operations?

DR. STEWART, closing: Just at this moment it occurs to me in connection with Dr. Carrel's work that it might be possible to increase the orifice of the heart somewhat in the same way that the orifice of the pylorus or of the ileocecal valve is increased, as suggested by Dr. Martin, by an incision down to the endocardium but not into it, allowing the wound to spread and suturing in another direction. Or, if it is desirable to decrease the opening, a portion might be excised without cutting into the heart cavity itself, and the wound sutured.

DR. CARREL, closing: With regard to Dr. Cushing's question of the possibility of extensive operations to a diseased heart, this can be solved only by experience. If the muscle itself is diseased we certainly cannot make an extensive operation involving the clamping of the pedicle of the heart and the stopping of the circulation. Regarding Dr. Stewart's suggestion of making a plastic operation in stenosis and suturing in the opposite way, I do not believe it is possible from a pathological standpoint, because the tissues are so taut that we could not bring them together without rupture.

CHOICE OF ANESTHETIC FOR DRAINING FOR ABSCESSES OF THE LUNG. REPORT OF TWO CASES OPERATED UPON UNDER LOCAL ANESTHESIA.

DR. FRED T. MURPHY, St. Louis: The writer believes that surgeons too generally have failed, in considering the needs for the use of the negative and positive pressure methods of Sauerbruch and Brauer, or the intratracheal insufflation of Meltzer and Auer, to distinguish sharply between intro-

thoracic operations in which the free pleural cavity will or may be opened, and operation in which the pleural cavity will not be opened.

The essential factors in operating for non-tuberculous abscess of the lung are considered to be the correct diagnosis, interference before the patient is so toxic as to be beyond relief, drainage without infection of the free pleural cavity, and avoidance of any factors which may tend to cause extension of the infection to uninvolved portions of the lungs.

The value of x-ray plates is emphasized as an aid in diagnosis. Results with and without operation are compared. The need of protecting the general pleural cavity from the abscess content is emphasized.

A REPORT OF THE CASES OF LUNG ABSCESS AT THE MASSACHUSETTS GENERAL HOSPITAL CLINIC.

DR. CHARLES L. SCUDDER: A total of 27 cases operated upon. There were 9 deaths, 18 recoveries; 11 cases without cough or sputum at varying times following operations; 8 cases were well 12 years, 5 years, 4 years, 8 years, 1 year, 1 year, 6 months, 6 months, respectively after operation. The remaining three cases have not been followed long enough to be sure of the result. This series illustrates the variety of the etiological factors concerned. Pneumonia with the influenza bacillus, embolism, actinomycosis and subdiaphragmatic infections were the chief causes. The necessity for the early recognition of bronchiectasis is emphasized that the surgeon may have the opportunity of removing the affected lobe before terminal conditions become established. The value of the x-ray is also emphasized. The operation of draining a lung abscess is best done in two stages unless the lung is adherent to the chest wall.

SURGICAL INTERVENTION IN CASES OF PULMONARY INFECTIONS

PROFESSOR ANTOINE DEPAGE, of Brussels: The results of Forlanini's method for lung tuberculosis are most favorable in cases in which one lung only is affected and in which there are no pleural adhesions. Forlanini's treatment is rather medical than surgical. We are pleased to state that this medical treatment is based on a surgical principle. Artificial pneumothorax as created through this method acts as follows:

1. In allowing the affected organ to rest, while the movement of normal respiration would prevent healing.

2. In allowing the walls of the cavity to fall together, thus emptying themselves of pus. It diminishes the absorption of toxins and the increase of bacteria. It allows a better healing of the ulcerated surfaces, on account of their proximity.

3. It is favorable to sclerosis of the pulmonary organs because it diminishes the blood and lymphatic circulation and produces irritation by the introduction of nitrogen in the pleura. (Castaigne.)

The question of whether there would not be reasons to make wider applications of Forlanini's method, not limited to tuberculosis was brought to my mind by the following case: In 1900 I had a case of infectious pneumonia which seemed as though it would be fatal on account of intoxication. The patient was a healthy woman of 27; the right lung only was affected; temperature 39.3 C. With the resection of two ribs and widely opening the right pleura relief came rapidly and the patient recovered. Unilateral pneumonia may cause death by acute intoxication before the second lung became inflamed. At this moment I would not propose to resect the ribs as in the above case, but I believe that Forlanini's metnod would be indicated. The collapsed lung is put at rest; it is no longer disturbed by respiratory movements; its circulation is far less active than when the lung is in normal inspiration. A collapsed lung can be compared to a member lightly compressed by a bandage, and this without allowing the intra-pleural pressure to be greater than the atmospheric pressure, simply by the fact of elastic retraction of the organ. In suppressing the respiratory movements and in diminishing the quantity of blood circulating through the organism, the chances of absorption of toxins which are the causes of immediate danger are reduced.

PULMONARY ABSCESS AND BRONCHIECTASIS; A CLINICAL REPORT.

DR. HOWARD LILIENTHAL, New York: Fourteen operations are reported in 11 cases of non-tuberculous intrapulmonary infection. There were five cases of bronchiectasis with one death in the hospital and one death a year later of hemorrhage, 3 cases of acute abscess with 2 recoveries, 1 chronic apical abscess recovered, 1 extensive gangrene died, 1 fetid bronchitis with minute abscesses mistaken for bronchiectasis died.

The various operations were: For direct drainage, free opening of the pleura, multiple rib resections, Tuffier's extrapleural tamponade; in 1 convalescent case not yet discharged the entire right lower lobe was removed for bronchiectasis.

The importance of bronchoscopy is emphasized in all cases in which operation is contemplated.

Intratracheal insufflation fills all indications when differential pressure is desired.

Conclusions arrived at solely from the cases reported are:—

1. The differential diagnosis of true lung abscess and suppurative bronchiectasis is important.

2. Radiographic study of each case is essential.

3. Bronchoscopic examination is a valuable procedure and should not be omitted.

4. Drainage of a lung abscess by thoracotomy is likely to result in cure.

5. Drainage of large infected bronchiectases may be followed by improvement, but complete recovery is unlikely.

6. Extensive thoracoplasty should be reserved for those cases in which other operations have failed.

7. Exploration of the pleural cavity and of the lungs by intercostal thoracotomy is feasible and reasonably safe.

8. Extirpation of a bronchiectasis by removal of the affected portion of lung may lead to complete recovery. The danger of the operation is great.

9. Artificial pneumothorax and Tuffier's extrapleural tamponade should be reserved for cases of pure tuberculosis.

10. Intratracheal insufflation is a simple, accurate and safe method of securing differential pressure.

11. Operations involving one lung can be performed with inhalation anesthesia.

THE PRESENT AND FUTURE IN THE SURGICAL TREATMENT OF TUBERCULOSIS OF THE LUNGS AND BRONCHIECTASIS.

PROF. C. HENSCHEN, Zurich: Severe and moderate cases of unilateral tuberculosis of the lungs, cavernous as well as infiltrated, namely, those with pronounced tendency to shrinkage, can through lung collapse and compression become cured clinically and anatomically. Every treatment of collapse must begin with an attempt at artificial pneumothorax; if the latter is impracticable on account of adhesions, then extrapleural thoracoplasty is indicated, with which in the clinic in Zurich, out of 122 cases 20% were clinically cured, 34.6% considerably improved, and 26% improved. In certain selected cases extrapleural pneumolysis and plugging also gave favorable results.

Among the bronchiectatics, the peripheral types with soft walls, principally those of post-pneumonic and post-empyemic origin may be treated by expansion and compression (verlagerung) measures (thoracoplasty, pulmonary ligature, intrapleural resection after Garré, extrapleural pneumolysis with plugging). Cases with primary disease of the bronchial wall or lesions situated centrally, around the hilum or with thick walls remain uninfluenced by this treatment. In the future a cure may be attained by working out the most practical compression method (verlagerung of the lower lobe under the diaphragm, after Henschen, in circumscribed bronchiectasis of the lower lobe), or through radical removal of the entire diseased lobe of the lung.

THE SURGICAL ASPECTS OF BRONCHIECTASIS.

DR. JAMES G. MUMFORD, Clifton Springs, N. Y., and DR. SAMUEL ROBINSON, Clifton Springs, N. Y.:

1. Granted that bronchiectasis is commonly the result of bronchial obstruction by foreign body, tumor, or disease, the first indication in therapy should be the removal, if possible, of this obstruction. Bronchoscopy for the removal of a foreign body has not infrequently arrested bronchiectasis.

2. In the earlier stages of the disease, nitrogen gas injection producing artificial pneumothorax is indicated, and should always be tried.

3. Pleuro-pneumolysis, or extensive rib resection, is a dangerous procedure, with additional dangers in bronchiectasis. It should be employed only when adherent pleura prevents the introduction of nitrogen gas. Even then it is a dangerous procedure, and one of doubtful value.

4. In late cases of bronchiectasis, where the disease is obviously confined to one lobe, lung resection is the sole source of relief. The attempt at lung resection at a one-stage operation has been attended with high mortality. Occasional successes do not prove that the one-stage amputation will become the method of choice. For the time being, at least, the general surgeon should, by artificial pneumothorax or pulmonary arterial ligature, first produce compression of the lung before attempting to excise any portion of it. Meanwhile, let us hope that the student of thoracic surgery will develop the one-stage excision.

ON BRONCHIECTASIS.

DR. WILLY MEYER, New York: This paper is written to give a picture of the present status of this disease, and because there is no treatise on this subject in the English language. It may be said today that bronchiectasis is a surgical disease, since medical, hygienic and specialistic treatment merely alleviate. It must, however, be considered a borderland trouble, because after operation the patient must pass into the hands of the internist and laryngologist for further treatment. It must be borne in mind that bronchiectasis is an affection of the bronchial tree, not of the pulmonary parenchyma. Hence, methods of benefit in tuberculosis cannot here have the same effect. A definite diagnosis is not easy. Stereoscopic radiography is here of great assistance. Since it has been shown that injection of a number of c.c. of fluid into the bronchi is well borne, I expect to try insufflation of argyrol, with the idea of enabling the radiographist to show more distinctly the contour of the walls of the distended bronchial cavities. The larger cavities of the lung are, of course, best treated by pneumotomy, and in localized and early cases this has given a number of cures. Loosening of the lung in conjunction with the costal pleura from the endothoracic fascia (pneumolysis) and the filling of this cavity with a transplant of fat tissue or omentum kept in cold storage (Tuffier) has shown some good results. A paraffin plomb for filling the cavity may also be of use, as has also thoracoplasty with resection of a number of ribs. The loosening of the lung from its adhesions with the pleural cavity and fastening its base further up on the diaphragm, giving the complementary space a chance to close by granulation was of benefit in one case of Garré's. Sauerbruch's and Brun's method of ligating branches of the pulmonary artery, which I have done three times, produces marked connective tissue formation in the effected lobe and firm adhesions between pulmonary and costal pleura, thus allowing the lobe to be compressed by thoracoplasty and phrenicotomy, to be performed later. In not a single case has real cure been obtained. In all patients a persistent expectoration of from one to three ozs. per day has been seen. It is possible that the quantity of expectoration may be further reduced by reduction of the fluid ingested (thirst-cure), and its character further improved by the inhalation of superheated medicated air, with the help of the hot-air douche, or by the direct application of fluids blown into the bronchus. Only the removal of the diseased lobe or lobes of the lung—pneumectomy—can effect a real cure in these patients. The efforts of the surgeon must be continued in the direction of overcoming the obstacles as to this radical interference. There are on record 8 pneumectomies for bronchiectasis with a mortality of 50%.

DISCUSSION.

DR. GERARDO M. BALBONI, Boston: My experience with artificial pneumothorax is based upon 61 cases treated during the last three years; 57 were cases of pulmonary tuberculosis, 4 were non-tuberculous. There were 2 lung abscesses and 2 cases of bronchiectasis. The experience with these four non-tuberculous cases is pertinent to this discussion. One lung case and one abscess case may be regarded as cured; the other two as improved. The puncture method was used in all these cases. The chief dangers associated with this method of treatment are pleural shock, gas embolism, spontaneous pneumothorax from rupture of the lung, and rupture of the mediastinum. It is best to produce the pneumotho-

rax gradually by frequent injections of nitrogen, bringing it to the desired volume and pressure. It should be maintained uninterruptedly for the entire period of treatment to bring about anatomical healing.

The manometer may show respiratory oscillations of three kinds,—negative, even oscillations, and positive. It is very important not to allow the lung to expand prematurely. The time to keep the lung collapsed varies with each individual case, depending upon the character and extent of the lesions. It is necessary to keep the lung collapsed for at least a year. When the patient has been free of symptoms for four or five months we may allow gradual re-expansion. With return of symptoms treatment should be immediately resumed. Frequent x-ray examinations are essential. The patient should have full knowledge that the treatment is long, tedious, troublesome and expensive and not devoid of dangers.

Dr. John B. Murphy, Chicago: There is no great danger from pneumothorax if you recognize the conditions which tend to produce a mortality. If you immobilize the mediastinum and fix the lung hilum you have no danger. Based upon my personal observation in from 2300 to 2400 cases, there is practically no danger from collapse of the lung. The series of cases presented today show that the chest can be opened and explored without special danger from pneumothorax if you immobilize the mediastinum. In my earlier work, when I let the mediastinum vibrate on inspiration, the septum went from side to side and there was no respiratory exchange produced. In the human if you will open the chest wall and compress the mediastinum to the opposite side you can go on with the work. In one case in which I opened both thoracic cavities in removing the anterior wall of the chest for carcinoma, in taking off the left side of the sternum I opened the right pleura. I heard the whistle and compressed it with my finger, completed the operation, sutured it, put back the flap, and aspirated the side on which we operated, which we always do to expand the lung. As a profession, I feel that we are not excused for postponing pneumothorax until we have the superlative lesions for which the more serious operations are done.

Dr. F. Wyllis Andrews, Chicago: I will follow my colleague, Dr. Murphy, to emphasize a point which has not been sufficiently brought out, and upon which he is a little heretical, as well as I,—the want of any indication for any kind of lung replacement in unilateral chest operations. Negative pressure is superseded by positive pressure. Experimental surgery has shown us that opening one pleural cavity is without risk, and we can go further and say that the opening of one pleural cavity does not in all cases stop the function even of the lung on that side: resection of the chest wall does not necessarily collapse the lung. That the lung should have a positive expansive power does not seem reasonable, but it has. If, as I have, you have seen a lung expand sufficiently with each respiration to thrust itself out into the outer air, you will believe that not in all cases will the lung collapse. One may cut a wide opening in the chest and in the majority of instances even should the lung collapse no great harm is done.

Dr. Frank E. Bunts, Cleveland: I agree with Dr. Andrews regarding the innocence of opening one side of the chest and performing almost any kind of operation necessary without artificial means of insufflating the lung. My experience is confined to lung abscesses and three small intralobar abscesses which could be located only by the radiogram.

Dr. Emmet Rixford, San Francisco: I think not enough attention has been called to the difference between unilateral open pneumothorax and closed pneumothorax. In my experience immobilization of the mediastinum works well when you have the right side of the chest open, but on the left side I have found difficulty in putting sufficient pressure on the heart; the trouble came from pressure on the heart. You can, however, make a partial open pneumothorax by blocking the opening with a sheet of guttapercha tissue or a folded wet towel that can be slipped under the flap and some resistance made to increase the egress of air. With the respiration and pulse approaching the danger point we would close the opening with the wet towel when the respiration and pulse would subside. After closing the opening with the flap the air is aspirated from the cavity and the respiratory function is satisfactorily restored.

Dr. Fred T. Murphy, St. Louis: I would emphasize the importance of differentiating between the conditions in which the cavity is to be opened and in which it is not. In the acute abscesses it seems to me, althouh Dr. Bunts has had a large experience, that it is essential to fix the chest wall before drainage.

I believe it is distinctly essential to use intratracheal insufflation in the cases in which the exploration is extensive and the chest wall widely opened, and not to use a general anesthetic. The remarks in the discussion have been qualified by the statement that in nearly all cases nothing happens. Why take the chance in the odd cases with such a simple method as that of Meltzer and Auer at one's disposal?

Dr. Lilienthal, closing: I want to correct a misapprehension on the part of Dr. Andrews, who says he has seen the lung extrude itself from the chest and that the motions of the lung with the chest open are satisfactory. If he has seen this it certainly has not been with inspiration, but expiration; probably with the patient groaning and straining you will get from the other side something that looks like an expansion, but which is really a blowing up of the lung. Regarding the tamponade, I have tried paraffin and fat, and I would strongly urge any one not to use the paraffin, which is a rigid body. The fat is soft and plastic and will adapt itself to the cavity and exert pressure. It is easily transplanted, and in a case in which I had used it, I found it at the second operation apparently well nourished.

Dr. Samuel Robinson, closing: In connection with the treatment of bronchiectasis I would emphasize the importance of compression of the lung. Artificial pneumothorax will compress the lung in the early cases, but, unfortunately, the cases do not all come early. The compression should then be done by rib resection, if necessary, conservatively performed. All of the cases, with one exception, of complete removal of the lobe of the lung for an infectious disease, have been the result of a series of previous operations. Every case of successful lobe excision has been accomplished by the two-stage method. Our approach to bronchiectasis should be with the idea of eventual excision. The fact that excision has almost universally failed in the one-stage operation should contraindicate it in people

with low resistance. With abscess of the lung the mortality is low. I agree with Dr. Fred Murphy upon the necessity of local anesthesia when possible.

DR. WILLY MEYER, closing: From the discussion it would seem that bronchiectasis is a surgical disease and that the earlier the patient is turned to the surgeon the better for a successful issue. Let us hope that with insufflation of the fluid of argyrol into the bronchi there will be improvement in the stereoscopic radiography of the condition. In treatment we know that compression artificially has excellent results. As Dr. Rixford has said, there is a difference whether the compression is done gradually or suddenly. Differential pressure as such is taking thoracotomy out of emergency work. It has paved the way to opening the pleural cavity in a safe manner, with the result that this cavity is now as widely opened with the help of this pressure as can be the abdominal cavity.

PLEURAL AND PULMONARY COMPLICATIONS IN TROPICAL ABSCESS OF THE LIVER.

DR. JAMES E. THOMPSON, Galveston, Texas: The influence of the absence of peritoneum over a part of the upper surface of the liver on extension of infection towards the pleural cavity is discussed, and it is concluded that the presence of the peritoneal cavity is no barrier, but that infections spread equally easily in all directions.

Infection of the lung and pleura occurs in one of two ways: (1) by direct extension, (2) by metastasis. The former method is by far the more common. Metastatic abscesses have been found not only in the lungs, but in the brain. When the abscess opens into the pleural cavity, it may do so either gradually or suddenly, the former being the rule. If the abscess penetrates the lung and opens into a bronchus, the patient spits up chocolate-colored pus. The quantity expectorated is sometimes very considerable. Spontaneous cures have been reported, where the abscess was completely evacuated by this route. It is, however, a rare termination. Usually the liver abscess empties itself partially and continues to drain intermittently through the lungs. Amebic infection spreads to the lungs and produces cavitation in it. In many instances the liver abscess heals completely, but the cavity in the lung persists and increases in size, killing the patient eventually.

In such instances the patient spits chocolate-colored pus to the end, the source of the pus being the cavity in the lung.

The prognosis is very unfavorable. Many authors place it as high as 84.8%. The author's mortality was 45.4%. If, however, every case could be followed, at least 75% would die from the complication.

Treatment is considered under: (1) Purulent extravasations into the pleural cavity should always be drained, and an attempt made to place a drainage tube into the abscess cavity in the liver. (2) Abscesses opening directly into the lung should be treated conservatively for a time, because some heal spontaneously. If they drain badly and the patient is losing ground, they should be attacked boldly by the transpleural operation and the cavities in both lung and liver drained.

A paper entitled "Empyema" by DR. JOSEPH RANSOHOFF of Cincinnati was read by title.

DOUBLE AND ANOMALOUS FORMS OF EMPYEMA.

A Preliminary Report on a Proposed Method of Treating Empyema Without Resort to Pneumothorax.

DR. KENNETH A. J. MACKENZIE, Portland, Ore.: The author reports in detail four of his own cases of double empyema occurring during an epidemic of influenza in the Northwest in the year 1879. In all cases either bilateral simultaneous thoracotomy or bilateral thoracotomy with a few days' interval between operations, was done. Several interesting cases of anomalous forms of empyema are reported, including gunshot wounds, stab-wounds, putrid empyemata following aspiration, and one case in which the Paragonimus Westermanii was the etiological factor. Thirty fully reported cases of double empyema are collected from the literature, in all of which aspiration, incision and drainage, resection and drainage, or some combination of the three procedures was performed, either simultaneously or at intervals varying from one to 150 days. In one case simple bilateral aspiration effected a cure. Including the fully and partially reported, 140 cases of double empyema are found in the literature, with a total mortality of 37, or 27.14%.

The author concludes:—

1. That the inefficiency of aspiration alone, considered together with the danger of septico-pyemia, warrants a more thorough operation in all cases.

2. The shock of an acute traumatic pneumothorax and the present mortality in the treatment of empyema makes the development of a better procedure desirable.

A preliminary report of a very ingenious substitute for acute operative pneumothorax is submitted. The plan is to replace the serous or purulent fluid of pleurisy or empyema by a non-toxic and non-absorbable fluid, such as petrolatum or liquid paraffin. The technic of this procedure is given. The method offers the advantage of relieving empyema without the shock of a traumatic pneumothorax. The hydrocarbon will act as an inhibitor of bacterial growth. By holding the surfaces apart until inflammation is allayed, dense adhesions are prevented. The non-absorbable and non-toxic fluids may prevent progression to the purulent stage. This procedure may be substituted for compression of the lung by nitrogen gas whenever such means are resorted to for the cure of tuberculosis.

VISCERAL PLEURECTOMY FOR CHRONIC EMPYEMA.

DR. CHARLES H. MAYO AND DR. E. H. BECKMAN: Up to the time of Fowler and DeLorme, various operations for the relief of chronic empyema with a large cavity have been tried in order to obliterate the cavity by collapsing the chest-wall and without making any attempt to restore the function of the collapsed lung. The operations of Fowler and DeLorme have been accepted quite generally in Europe, but have not received much attention from American surgeons. A systematic review of the literature discloses but 24 cases reported by American surgeons in the last twenty years. It is believed that in a considerable percentage of cases of chronic empyema the lung will expand to a greater or less extent if visceral pleurectomy, combined with the gridironing of Ransohoff, is performed. In the experience of the authors, the operation is not so severe or so dangerous as the

Schede operation. Patients should be carefully prepared for operation by securing drainage at the most dependent part of the cavity, by reducing the infection to a minimum and the resistance of the patient to the maximum by vaccines. The operations for this condition cannot be made by rule, but must be selected individually for each case. They are often best done in stages, especially when the patient is in a debilitated condition. It is advised to try visceral pleurectomy first, as some lung expansion is nearly always obtained. If the cavity still persists, the operations of Estlander and Schede, or one of the modifications of these operations can be done at a later time to obliterate the cavity remaining. Four cases of visceral pleurectomy are reported, three of which healed primarily, and in the other two-thirds of an entirely collapsed lung is functioning. All the patients were adults.

DISCUSSION.

DR. JOSEPH RANSOHOFF, Cincinnati: The thoracic cavity cannot be opened with the same ease and safety as the abdominal cavity, because of the actual shock accompanying the opening for such a small thing as aspiration. In my own service I know of two deaths upon the table from simple thoracotomy, deaths that occurred without premonition under general anesthesia. There is no place in the whole anatomy where the use of a knife is more likely to be followed by shock than in the chest, and if anywhere anoci-association is indicated, it is here. It is highly essential that we should open the chest under local anesthesia. One of the most admirable additions to our treatment of the simple cases is that of Hobben, of not aspirating the fluid but of blowing it out. The last essayist alluded to an operation which I devised some seven or eight years ago,—discission of the pleura. It is an operation like so many others that one makes because he cannot continue with an operation that he originally set out to do. How to designate this modification of the DeLorme-Fowler puzzled me until I remembered the operation of the ophthalmologists, known as discission.

DR. FRED B. LUND, Boston: In 1910 I reported seven cases of pleurectomy. Since that report I have been able to modify Dr. Ransohoff's procedure by leaving on some little patches of pleura, and in favorable cases they will be long enough to suture part of the lung to the chest wall. In children if you do an Estlander or Schede operation and take out all the ribs, you invite curvature of the spine, but if you can make the lung expand you will find a straight back as the child grows. Local anesthesia in ordinary empyema is very valuable. Where you trephine the rib and put in a small drain you will not obtain satisfactory results, nor even where you put in a large tube. There is needed a large hole for the pus to come out and a long lap to come down over it so that the air cannot get in. I have used the skin for this lap recently, making the incision in the skin over the rib, below the rib you take out, suturing the top to the lower end of the incision, and the upper end is absolutely flush with the inside of the chest. Thick pus will lift up the lid, and when the chest expands the air is prevented from getting in.

DR. CHARLES N. DOWD, New York: I have been much interested in the problem of decortication and have done the operation in 24 cases. Among my cases I had to operate three at periods of several months or years after the original operation, and I have been very much surprised to find how little lung remained for these patients. I think in the discussion today the difficulties of the DeLorme and Schede operations have been magnified. You will find in each of these chests a sinus running to the apex of the chest from the cavity. If you carry the incision through the anterior axillary line, cut one rib after another to the apex of the chest, and then cut through the pulmonary pleura and strip it back you will not give your patient very much shock.

DR. ALEXANDER PRIMROSE, Toronto: In the case of a man who came with a pyopneumothorax and extreme emaciation and discharge I undertook to do an extensive Schede operation and succeeded in carrying him through and he made a complete recovery, returning to his work as a motorman. He continued for two years, when he contracted pneumonia and died. At post-mortem we found, as Dr. Dowd stated of his cases, very little functional lung on the operated side. It appears to me that if after section of the visceral pleura these lungs are capable of expanding, then these individuals are in better condition to withstand such an illness as my patient had.

DR. RUSSELL, Melbourne, Australia: It occurred to me that Dr. Ransohoff laid too much stress upon the fact of opening the pleura widely. In Australia it is noticed that in cases of hydatid of the chest, extreme danger and sudden death are liable to attend a slight procedure such as diagnostic puncture. The explanation is still to be sought. It is a nervous phenomenon from effect on the vagus. It is not a case of drowning the patient by the escape of the hydatid fluid into the cavity and the bronchus. It is also well known that sudden death is liable to occur from a cause so slight as syringing out the pleura.

DR. FRANK E. BUNTS, Cleveland: If I am not mistaken Dr. Murphy gave us an interesting account of treating some of these cases by the injection of formalin without the necessity of opening the thoracic cavity. I wondered whether in double empyema where there is presumably danger in opening both cavities at once, if we opened one, we could not inject the other with the formalin solution. I recently had occasion to operate on a child of thirteen for appendicitis and subsequent pleural pneumonia, then empyema, which I opened and drained, and the child then developed an empyema on the other side. I was afraid, not knowing the good results which Dr. MacKenzie has spoken of in treating both sides at once, to open the other side, and advised the injection of formalin and glycerin; this was done and the pus continued and on account of the embarrassed respiration it was necessary to aspirate that side every day for several weeks until the side which was draining closed. Then I resected the rib and drained the other side. The patient made a satisfactory recovery.

DR. JOHN B. MURPHY, Chicago. Answering Dr. Bunts, he is quite correct. I did recommend this plan and still use it. I never open an empyema without using that first, and I rarely have to open them after using it. I never use it where the empyema communicates with the bronchus, and in postpneumonic empyemas, if treated early, one to three injections are sufficient. I have not had any untoward accidents from it. Brewer's comment in "Keen's Surgery," that he had learned of two fatal cases, does not agree with my experience.

DR. THOMPSON, closing: The constant spitting up of the chocolate pus should not be considered convincing evidence of the continued presence of the abscess in the liver. In a number of cases post-mortem has shown no abscess.

DR. MACKENZIE, closing. In my experiments upon guinea-pigs, with the aid of Professor Benson, the thorax was injected with the liquid paraffin. At the end of five days there was no evidence that the petrolatum was setting up inflammation of the pleura or of absorption of the petrolatum. Two dogs were experimented upon; one died in the midst of operation; the second, because of faulty technic, showed at post-mortem extensive invasion with both pleurae involved.

At the meeting of this Association in Denver I was impressed with the figures reported by Dr. Murphy and I wondered why the profession of this country was so slow to adopt the points so well and conservatively explained at that time.

DR. MAYO, closing: Some one must see the early cases in order to open and drain them, and Dr. Murphy's method of injecting the cavity to stimulate repair had a good deal to recommend it. These conditions in children sometimes get well from one or two aspirations, which will cure pneumococcus empyema. It will be of advantage if some one will bring out what can be accomplished by preventing these cases from becoming chronic.

(To be continued.)

Book Reviews.

The Legend of Maillot. By EMILE LEGRAIN, M.D., of Algiers. Second edition. Paris: Maloine. 1914.

After describing the great epidemics of the armies of Northern Africa from the time of the Romans, the author devotes this polemic monograph to a refutation of the theories of Maillot in their interpretation and treatment. He considers that Maillot did not introduce quinine medication into Algeria, and confounded diverse maladies under the same diagnosis. Whatever the merits of his contention, the work is a useful contribution to the literature of medical history.

Infant Feeding. By CLIFFORD G. GRULEE, A.M., M.D., assistant professor of pediatrics at Rush Medical College; chief of pediatric staff, Cook County Hospital. Second edition, thoroughly revised. Octavo of 314 pages, illustrated. Philadelphia and London: W. B. Saunders Company. 1914.

The fact that a second edition of this book has been called for in two years shows that it has been well received by the medical public. The knowledge of the subject of infant feeding which has been acquired during the last two years has been incorporated in this edition. The general plan of the work is the same, however, and its merits and defects the same as in the past. It is well worth perusal by all who are interested in the subject of infant feeding, especially if they wish to become acquainted with the teaching of the German school of pediatrics.

Medical and Surgical Reports of the Episcopal Hospital. Volume II. Philadelphia: William J. Dorman. 1914.

This second volume of the Philadelphia Episcopal Hospital Reports records the work of that institution for the calendar year 1913. During this period 5642 patients were treated in the hospital and 31,656 in the out-patient dispensary. Three-fourths of the volume consists of a series of 44 papers by members of the staff on a variety of topics of clinical or scientific interest. The book is illustrated with 157 figures, many of which are full-page plates, and is a worthy contribution to medical literature by one of the large hospitals of the United States.

Causes and Cures of Crime. By THOMAS SPEED MOSBY. Illustrated. St. Louis: C. V. Mosby Company. 1913.

In spite of numerous split infinitives and a few expressions like "this phenomena," this book is really well written. It presents in a singularly attractive and original style the opinions of an expert criminologist about the etiology, prophylaxis, and therapeusis of crime.

For the cosmic factors of crime, the author hardly makes out more of a case than to instance the climatic and seasonal variations of crimes of violence (including suicide), and crimes against property. The social and individual factors, however, he presents in good detail. Prophylactic measures he divides into eugenics, asexualization, education, and social ameliorization. With reference to "the feminine suffrage" he eloquently and picturesquely employs the adverse biologic argument, recently made familiar by Professor Sedgwick.

In the treatment of crime, Mr. Mosby believes that the theory of punishment should be protection of the community and reformation of the individual. The death penalty he considers more justifiable. Imprisonment should be regarded as a means of segregation, not of punishment. The reformatory should replace the penitentiary. Indeterminate sentence, probation, and parole he regards as measures of proved efficacy in the regeneration of criminals. The new penology, in this aspect becomes a department of social medicine.

For this relation to medicine, and for the author's refreshing and eloquent fearlessness of statement, the book deserves and attracts interested reading especially by physicians. It is marred by many typographical errors, and by the pictures of criminals, which, as they are not used for reference in the text, seem to serve no useful illustrative purpose.

THE BOSTON

Medical and Surgical Journal

THURSDAY, SEPTEMBER 10, 1914

A Journal of Medicine, Surgery and Allied Sciences, published at Boston, weekly, by the undersigned.

Subscription Terms: *$5.00 per year, in advance, postage paid, for the United States. $6.56 per year for all foreign countries belonging to the Postal Union.*

Papers for publication, and all other communications for the Editorial Department, should be sent to the Editor of the Boston Medical and Surgical Journal, 809 Paddock Building, 101 Tremont Street, Boston. All orders for reprints must be sent in writing to the Editor on or before the day of publication.

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LATENT SYPHILIS.

Syphilis is no longer to be regarded as a local process, but as a systemic infection with the spirochæta pallida, which has already spread from the site of the initial lesion at the time of the development of the chancre and has become a general invasion of the body at the period of the secondary manifestations of the disease. The diagnosis is relatively easy during the early part of its course, but is increasingly difficult with the lapse of time after the primary and secondary stages have passed. It should be appreciated that there are atypical manifestations of late syphilis which may readily escape detection without resort to more searching investigation than is usually attempted.

The Wassermann test is as yet commonly applied only in the larger medical centres. Blood for the test can easily and safely be procured by venous puncture under the observance of proper technic and strict asepsis, but it is unlikely that performance of the test can ever be successfully carried out without adequate laboratory facilities and special training. It is fortunate that the long felt need of a State Laboratory for the performance of the Wassermann test is soon to be filled. A grant for this purpose has now been made by the Legislature and the laboratory will soon be in operation.

In the diagnosis of latent syphilis a Wassermann test on the blood may not be sufficient. In some cases, a positive blood test can be provoked by the administration of salvarsan. In cerebrospinal syphilis, complement fixation tests on the blood may be negative while the spinal fluid is positive. The suspicion of cerebrospinal syphilis may, therefore, need to be confirmed by lumbar puncture. In addition to the complement fixation test on the spinal fluid, a cell count, investigation of the fluid for globulin and Lange's colloidal gold test may be of assistance.

With the recognition of the number and variety of the late manifestations of syphilis should come an appreciation of the responsibility of the medical profession for their occurrence. Disabling syphilitic disturbances would be far less frequent if the disease were more efficiently treated earlier in its course.

AMERICAN RED CROSS PLANS AND PREPARATIONS.

During the past week, subscriptions to the American Red Cross relief fund for the European war have not come in as rapidly as had been hoped. On Aug. 27, Miss Mabel Boardman, the active head of the Red Cross Society, issued the following statement:—

"Up to the present time for the European war there is only about $100,000 in sight, and that includes $20,000 we expect to receive from the Newport fête. It will take every cent of this money to equip and send the first steamship to Europe with nurses, surgeons and medical supplies. Our idea has been to have the steamship return and take over a second staff, as it will encourage all to have help arrive when the first lot have become pretty tired with the strain.

"One might think it an easy thing to go out and buy 250,000 pieces of gauze and a like amount of common cotton for splints, absorbent cotton, 2000 stretchers and great quantities of chloroform, ether, ice bags and hypodermic needles. We have to telegraph all over the United States for them, as no one firm keeps such large amounts on hand. Other countries are probably trying to buy the same things here. I met a physician from the Berlin Red Cross Society last evening. He had just arrived from Germany and is probably here to see what he can buy. He said his wife and daughter are serving in a Berlin hospital.

"The average person reads of 10,000 soldiers wounded, as though it were happening in medieval times. If a man is hurt in the hunting field he is taken immediately to a hospital, and is given the best attention. If there were 100 surgeons working over 10,000 wounded, giving only ten minutes to each, the last man would have to lie unattended for sixteen hours.

"It would be a great help if women here

would start sewing for the soldiers in hospitals by making nightshirts, pajamas and convalescent robes."

On account of the shortness of funds, an appeal has been made for the coöperation of various other bodies and organizations.

"It is believed that the plan to bring about a coöperative arrangement between the municipal government and the board of trade, chamber of commerce, merchants' association and local Red Cross organization in each of the principal cities of the United States will result in the next few days in a systematic and thorough canvassing for Red Cross European relief funds, and it is hoped that funds, which are desperately needed for the Red Cross relief expedition, will come in generously.

"Red Cross headquarters received a cablegram on August 28, from Nice, France, announcing that an American hospital ward, for the care of wounded soldiers, had been opened by American citizens there and thanking the American Red Cross for a recent financial contribution which made this ward possible.

"All subscriptions to this relief fund may be sent to help every suffering country, or if desired for any especial nationality, the subscriber may so designate the gift. The American Red Cross stands for perfect neutrality to alleviate all suffering."

As a matter of fact, the Newport fête on Aug. 28 netted the sum of $40,000 for the Red Cross fund, and since that time, subscriptions have come in more abundantly. On Sept. 2 the total Massachusetts fund amounted to $7,982.82, and the New York fund to $53,287.10.

On Aug. 31 it was announced that the American Red Cross had chartered the German steamship *Hamburg*, which was renamed the *Red Cross* and on Sept. 10 sailed from New York carrying the first relief expedition.

"The expedition consisted of 120 nurses and 30 surgeons. The nurses will be in charge of Miss Helen Scott Hay, a graduate nurse, who was chosen by Queen Elinora of Bulgaria to oversee the building of a hospital in that country. The whole party will be in charge of Major Robert Hugh Patterson. The ship will touch at Falmouth, where 24 nurses—two units—and six surgeons will be landed for England. At Rotterdam will be landed two units for Russia, two for Austria and two for Germany. The nurses for France will be left at a French port. Nurses for Servia were sent over on Sept. 8, in the Greek ship, the *Ioannina*. Holland, Greece and Italy have asked the American Red Cross if there will be nurses for them in case their countries become involved in the war, and Miss Boardman hopes that when the relief ship returns it can be fitted out again and despatched to Europe."

Of the surgeons aboard the *Red Cross*, only one is from Massachusetts, Dr. Howard W. Beal, of Worcester. Of the nurses, 11 are from Massachusetts, 11 from Ohio, and 12 from Illinois.

Meantime similar plans and preparations have been made and put into effect by the Red Cross Societies of other nations.

"The first British Red Cross detachment started for Belgium on August 16. It was sent at the request of the Belgian government, for general service with the allied troops and consisted of 10 surgeons, 10 dressers, and 20 nurses. The surgeons were carefully selected for the work. Some of the dressers have already had experience in the Balkan war. The nurses are fully trained hospital nurses of not less than three years' training. The members of the detachment took light equipment, and on arrival their services were placed at the disposal of the war authorities. This unit is establishing a hospital at the offices of the Sleeping Car Company at Brussels. Two of the surgeons have gone forward with the Belgian troops.

"Cable messages from Paris announce that the French government has placed at the disposal of the American Hospital, at Neuilly, the new buildings of the Lycée Pasteur, to be used during the war as an annex to be known as the Ambulance Hospital for the care of the sick and wounded of every nationality. It will be equipped and supported by Americans and served by American doctors and nurses, and will maintain about 1000 beds.

"It is the intention to raise $250,000 in the United States and an equal amount in France for the equipment and maintenance of the hospital."

The steady advance of the German armies towards Paris may, however, interfere with the plans and activities of this hospital at its present site. On Sept. 2 the seat of French government was removed to Bordeaux, Paris was placed in a state of siege, and all wounded troops were ordered removed from the city.

MEDICAL NOTES.

EFFICIENCY OF TUBERCULOSIS SANATORIA.—Methods by which tuberculosis sanatoria may be made more efficient through the employment of their "graduates" are discussed in a series of papers issued on Aug. 31 by The National Association for the Study and Prevention of Tuberculosis in its official organ, *The Journal of the Outdoor Life*.

The papers by Dr. Charles F. Bolduan, of the New York City Health Department; Dr. Sidney F. Goldstein, of the Free Synagogue, New York; and Dr. David R. Lyman, of the

Gaylord Farm Sanatorium of Wallingford, Connecticut, show that many tuberculosis sanatoria waste their efforts because they do not care for their patients properly after discharge. Dr. Goldstein found that in one sanatorium in New York, 52% of the work done was literally wasted. Dr. Bolduan's and Dr. Lyman's results showed some waste, but not nearly so large a percentage. The reason for these relapses is found both in the unsanitary home conditions to which the patient returns, and also in the industrial conditions under which he is forced to work.

Dr. Lyman says that the greatest present need in sanatorium treatment is early diagnosis, and that such early cases can usually return with safety and success to their former occupations after discharge from the sanatorium. For certain groups of city patients Dr. Bolduan and Dr. Goldstein favor working places where they can work at their trades under medical supervision and sanitary conditions.

Experiments of this character are now being considered in several cities. In Philadelphia, the Henry Phipps Institute has opened a small shop for some of its tuberculosis patients. In New York, the Joint Tuberculosis Committee will soon establish an open air clothing factory, and a similar experiment is also projected by the Joint Board of Sanitary Control of the Cloak and Suit Industry. The Delaware Tuberculosis Sanatorium is considering a hosiery mill for its patients. At Otisville, N. Y., in connection with New York City's Tuberculosis Sanatorium, an industrial colony is also being considered. A successful experiment in pottery making has been carried on for two years at the Arequipa Sanatorium in California.

Special Anesthesia Supplement.—Recent years have been marked by some important contributions to the theory and, especially to the practice of surgical anesthesia, but there has lacked what is now quite needed for the further scientific development of this alongside the other departments of surgery—a journalistic medium and editorial mouthpiece. The *American Journal of Surgery* will be expanded to meet this need. Beginning with the October issue and quarterly thereafter, this journal will publish a 32-page supplement devoted exclusively to anesthesia and analgesia. This supplement will be a complete journal within a journal, containing editorials, contributed articles and communications, abstracts, transactions of societies, and book reviews. The supplement has been adopted as the official organ of the American Association of Anesthetists and the Scottish Society of Anesthetists, and it will also publish the transactions of other like societies. The editor of this supplement will be Dr. F. Hoeffer McMechan, of Cincinnati, one of the founders of the American Association of Anesthetists and a charter member of the New York Society of Anesthetists. He will be assisted by a staff of well-known specialists in anesthesia.

A German Gift to Science.—It is announced that Professor Dr. Alexander König has presented to the University of Bonn a zoölogic museum and laboratory filled with collections valued at 1,000,000 marks.

BOSTON AND NEW ENGLAND.

Needs of the Boston Floating Hospital.—In the issue of the Journal for Aug. 27 we published an appeal by the Boston Floating Hospital for funds to enable the completion of this season of its work. On account of the inadequate response by the public to this appeal, the hospital has been obliged to close one of its wards. Further contributions are urgently needed, and should be sent to George C. Lee, 44 State St., Boston.

A Centenarian.—Mrs. Martin Curran, of Newburyport, Mass., died in that city on Sept. 1, following a fracture of the neck of the femur several weeks ago. She is said to have been born on May 1, 1814, in county Galway, Ireland, and after her marriage migrated to St. John, N. B., in 1841. She had lived in Newburyport since 1843. All of her five children are dead, and she has been a widow for the past 50 years. She is survived by only two grandchildren, both elderly spinsters.

Hospital Bequests.—The will of the late Francis B. Sears, of Boston, who died at Weston, Mass., on Aug. 26, was filed in the East Cambridge probate court on Sept. 2. It contains bequests of $500 each to the Boston Children's Hospital and the Boston Floating Hospital.

NEW YORK.

New Public School Buildings.—A number of new public school buildings will be opened this season which in their construction and equipment will embody all the latest ideas for buildings of this character. A special feature is the "anemic room," for pupils below the average in strength and physical development. This will be without artificial heat, but care will be taken to provide the children with the requisite extra clothing; and in connection with it is a special diet kitchen where suitable luncheons will be prepared.

Bequest. — The will of the late Jacob Langeloth, which was filed on August 30th in the Surrogate's Court, provides for the erection of a home to be known as the Valeria Recreation and Convalescents' Home, named for the testator's wife, Mrs. Valeria Langeloth.

Massachusetts Medical Society

RED CROSS SURGEONS.—Among the surgeons of the first American Red Cross relief expedition, Dr. Howard W. Beal of Worcester, Mass., and Dr. Robert W. Hinds of Buffalo, N. Y., are members of The Massachusetts Medical Society. Dr. Beal is an ex-surgeon of the United States army, having served two and one-half years in the Philippines. He is a member of the medical reserve corps of the army. Dr. Beal, in addition to relinquishing his private practice temporarily, also gives up his hospital work at the City and Memorial Hospitals.

APPOINTMENT OF DR. EDWARD P. WORTH.—Dr. Edward P. Worth of Edgartown, a member of The Massachusetts Medical Society, has been appointed by Governor Walsh medical examiner of Dukes County, third district, to fill a vacancy. Dr. Worth was already medical examiner in the first district of this county.

BERKSHIRE DISTRICT MEDICAL SOCIETY.

RESOLUTIONS ON THE DEATH OF J. F. A. ADAMS, M.D.

DR. JAMES FORSTER ALLEYNE ADAMS died at his home in Pittsfield, Mass., July 27 from a sudden and severe attack of cardiac dilatation, Dr. Adams had not been well for some months and had had attacks similar in character but not so intense as this last and fatal seizure. There had been unmistakable symptoms of a progressive arteriosclerosis for some time.

The Berkshire District Medical Society has lost one of its most valued and loyal members. Dr. Adams was, as so many of you remember, devoted to the interests of the society, and rarely missed being present at the regular meetings, taking part in the discussions, and keenly alive to the advancements made in our profession. He had held nearly, if not all, the offices in the Society, and at the time of his death was a councillor of The Massachusetts Medical Society and the supervising censor.

The distinguished office of president of The Massachusetts Medical Society could have been his at one time had his health permitted him to carry the burden of work that the position entails. In 1907 he delivered the annual discourse at the meeting of the State society, his subject being "The Segregation of Consumptives." The later years of Dr. Adams' life were devoted to the problem of the prevention and control of tuberculosis both in the state and locality. He was at one time the president of the board of trustees of the Rutland State Sanatorium, and when he died was the president of the Pittsfield Anti-Tuberculosis Association.

Personally, Dr. Adams was one of the most genial and lovable of men. He had a remarkably keen and active mind, witty, a lover of books, prose and poetry, fond of flowers and all the beauties of nature. He was devoted to his church, his home, and family. A loyal and true friend, a Christian gentleman, and always an earnest student and industrious worker in his chosen profession.

At a meeting of a medical society in a neighboring state a few years ago, a tribute was read in memory of a brother physician. We will quote from it, so applicable is it to the personality of Dr. Adams:

"He was a man of cultivated and refined tastes, fond of literature, of art, of study and travel. A high sense of duty and responsibility governed his conduct in public as well as in private relations. A man of broad sympathies and tender sensibility, he was ready at any time to sacrifice his own comfort and advantage for others, but in matters involving a principle he made no concessions. He was as staunch in morals as he was courteous in manners."

"He understood the value of mental recreation in preventing his mind from growing narrow in a slavish routine of work. General literature and travel were a solace to him, and his participation in public and local affairs, while it enhanced his worth as a citizen, made him all the more useful as a doctor. Unmarked by any great event, his life had been a noble one. It had earned for itself ample appreciation before it closed, and it ended in honor."

ALFRED T. WAKEFIELD, M.D.,
WALLACE E. BROWN, M.D.,
HENRY COLT, M.D.,
Committee on Resolutions.

Current Literature

MEDICAL RECORD.

AUGUST 8, 1914.

1. STOW, B. *Metchnikoff's Basic Principle,—Intestinal Antisepsis Through Biological Aids,—Attested by the Bacillus Bulgaricus.*
2. BROWN, S. H. *Acute Contagious Conjunctivitis. Preliminary Report of a Series of Cases Originating in a Public Swimming Pool.*
3. FRIEDMAN, H. M. *Aspects of Visual Acuity.*
4. FORREST, E. D. *The Physiology of Worry.*
5. *COUGHLIN, R. E. *The Medical Aspects of Athletics.*
6. FIFIELD, H. L. *Acute Suppurative Otitis Media.*
7. HAGEMANN, J. A. *A Rhinological Aspect of Some Mental Disturbances.*

5. Coughlin has made a study of the effects, immediate and remote, of athletics on health. Among other observations, he says that the heart of the trained athlete is better fitted than a normal heart to carry a person through a contest, but distinctly disadvantageous for normal human activities. The most common causes of death among athletes are

cardiac diseases, tuberculosis, typhoid fever, pneumonia, nephritis, in the order named. [L. D. C.]

AUGUST 15, 1914.

1. *ABBE, R. *The Present Estimate of the Value of Radium in Surgery.*
2. SICARD, M. H. *Trichinosis, with a Report of Cases.*
3. ZIGLER, M. *Report of a Case of Phlebitis of the Penis Simulating Edema Induratum, Complicating Acute Gonorrhea.*
4. HUNTINGTON, W. H. *Tonsillectomy, Its Indications and Choice of Operation.*
5. HARTSHORN, W. M. *Bacillus Coli Infections in Infancy and Early Life.*
6. CUNNINGHAM, W. P. *Ulcus Cruris Inveteratus.*
7. GREEN, C. R. *The End of Life.*

1. Abbe discusses the value of radium in the treatment of neoplasms. From his experience and that of others he concludes that it has very real value in the surgery of malignant tumors. The exaggerated claims of enthusiasts should be disregarded but not more so than the ridicule of skeptics. [L. D. C.]

NEW YORK MEDICAL JOURNAL.

AUGUST 15, 1914.

1. ANDERS, J. M. *The Scope of the American Society for Physician's Study Travels.*
2. COFER, L. E. *National Quarantine.*
3. FISCHER, L. *The Value of Skimmed Milk and Its Dilutions in Fever.*
4. FRANKLAND, W. A. *The Effects of Caffeine and Nicotine on the Activity of the Intestinal Musculature.*
5. ROBIN, A. *The Campaign Against Pulmonary Tuberculosis.*
6. GERAGHTY, J. T. *The Value of Renal Functional Tests to the Surgeon and the Limitations of These Tests.*
7. BUCKMASTER, F. *Pyloric and Duodenal Obstruction.*
8. SLADE, C. B. *Further Development of the Usefulness of the Sanatorium.*
9. HOROWITZ, P. *The Treatment of Diabetes Mellitus with Bacillus Bulgaricus.*
10. BARNES, G. E. *A Sputum Trap for Lung Examinations.* [L. D. C.]

BERLINER KLINISCHE WOCHENSCHRIFT.

No. 22. JUNE 1, 1914.

TO MAX RUBNER ON HIS 60TH BIRTHDAY.

1. TRENDELENBURG, W. *Newer Methods and Results in the Study of the Physiology of the Brain.*
2. LICHWITZ, L. *The Influence of Muscular Work on the Sugar- and Lactic Acid-Content of the Blood.*
3. *LOEWY, A., AND PLACZEK, S. *The Influence of High Altitude on the Psychic State of Aeronauts.*
4. REUSS, E. *Concerning Duodenal Feeding in Gastric Ulcer.*
5. HIRSCHFELD, H., AND WEINERT, A. *Clinical and Experimental Investigations into the Influence of the Spleen on the Erythroplastic Function of the Bone Marrow.*
6. STERN, L. *On the Mechanism of the Processes of Oxidation in the Animal Organism.*
7. *KAREWSKI, F. *Experiences in the Treatment of Surgical Tuberculosis with Friedmann's Serum.*
8. *WICHMANN, P. *Friedmann's Serum in the Treatment of Tuberculosis.*

3. The authors report their results in a series of experiments performed on subjects in an artificially rarefied atmosphere to test the effect of the latter on the subject's reaction time and ability to perform certain mental problems, compared with the results of the same experiments performed under normal conditions. They are led to think that the differences are very slight,—indeed practically negligible. It is true, however, as they note in their conclusions, that in experiments the vicissitudes of actual flying cannot be reproduced,—the constant strain and demand of one's attention, the rapid changes in altitude, the cold, etc.; and they conclude that actually there are many factors which really affect profoundly the mental processes of the aviator.

7. Karewski has for over six months treated a large number of cases of surgical tuberculosis with Friedmann's serum, and says that it is not of value as a therapeutic or prophylactic measure, and is not without danger itself.

8. Wichmann also is skeptical in regard to Friedmann's serum, and thinks that it has not yet proved itself to be of value either in prophylaxis or therapy. These two articles are noted simply because in a recent number of this journal several articles appeared praising the serum most highly. [R. H. M.]

No. 23. JUNE 8, 1914.

1. KÖNIG, H. *The Prognosis in Morphinism.*
2. *V. HAUSEMANN, D. *The Changes in Normal Tissue and Tumors after Mesothorium and Radium Treatment.*
3. V. TAPPEINER, FR. H. *Duodenal Ulcer.*
4. *V. CZYHLARZ, E. *"Anaemic Erysipelas."*
5. NEUWIRTH, K. *Some Observations on Intrauterine Forceps.*
6. KAREWSKI, F. *Experiences in the Treatment of Surgical Tuberculosis with Friedmann's Serum.*
7. MEYER, R. *A Contribution on Clairvoyance, Premonitions and Thought-reading.*

2. This is an article describing how after treatment with a radio-active substance the tumor cells are killed and a thick hyaline substance is formed resembling scar-tissue or keloid. The same happens after the exposure of normal cells, though the changes are not so great. The author mentions the fact that the effect of the rays extends to a depth of only three or four centimeters, and that old tumor cells are killed much sooner than young and vigorous ones.

4. von Czyhlarz describes three personal cases which exactly resembled erysipelas of the face, save that the affected area was not reddened, but pale and anemic, like a nephritic edema. In each case the course of the disease, and the subjective and objective signs, with the above exception, were those of erysipelas, and he thinks that there is a definite condition to which he has given the name of anemic erysipelas. [R. H. M.]

WIENER KLINISCHE WOCHENSCHRIFT.

No. 15. APRIL 9, 1914.

1. LAZAREVIC, V. *Operative Treatment of Breast Cancer, with End Results.*
2. GOLDSCHMIED, K. *Method of Preserving Continence after Operations for Cancer of the Rectum.*
3. VON KAHLER, H. *Effect of Menstruation on the Sugar-Content of the Blood.*
4. KÖHLER, R., AND SCHINDLER, O. *Radium Therapy of Cancer of the Uterus.*
5. PULAWSKI, A. *A Case of Periodic Joint Swelling.*
6. PLESCHNER, G. *Report on the Urological Department of the Surgical University Clinic in Vienna.*

No. 16. APRIL 16, 1914.

1. KORCZINSKI, L. *Sporadic "Heine-Medin Disease."*
2. *SPIEGLER, F. *Benzol in Leukemia.*
3. BUSSON, KIRSCHBAUM, AND STANICH. *Diplococcus Lanceolatus in Pemphigus.*

4. RETHI, L. *Intranasal Operation of Maxillary Sinus Disease: Its Advantages.*
5. HATIEGAN, J., AND DORI, A. *Symptomatology of Pellagra.*
6. LOEWY, O. *Treatment of Cholera with Hypertonic Saline Infusion, Tincture of Iodine, and Potassium Permanganate.*

2. The author reports a case and cites two others in which the leucocytes in myelogenous leukemia dropped to almost nothing and the patient died. The figures in the author's case are to 1400, then to 400. The figures of the two reported cases are from 988,000 to 1720, and from 56,000 to 5300, and then to 200. These cases emphasize the need of careful watching in the benzol treatment of leukemia. [F. S. K.]

BULLETTINO DELLE SCIENZE MEDICHE.

JULY, 1914.

1. *FRONTALI, G. *The Metabolism of Creatin-Creatinin in Fasting and after Total Thyroidectomy.*

1. From Albertoni's physiologic institute at the University of Bologna, Fontali presents an elaborate study of creatin-creatinin metabolism. From his experimental observations on ten dogs and two lambs, summarized in seven tables, he reaches the following conclusions:—

a. In fasting dogs, the elimination of creatin begins in from four to twelve days, and is maintained within restricted limits. The elimination of creatinin remains constant.

b. In thyroidectomized dogs, the elimination of creatin begins early, and always before they refuse food. Its quantity is notable. The creatinin, contrary to the case in inanition, goes on increasing.

c. The muscles of the normal dog contain about 3% of creatin. [R. M. G.]

Miscellany.

THE MEDICAL SCHOOLS OF NEW ENGLAND.

WE print herewith the data as to the medical schools of New England that were contained in the last annual report of the Council on Medical Education of The American Medical Association (*Jour. Amer. Med. Asso.*, August 22, 1914), with the idea that they will prove of interest to many of our readers.

MAINE.

Maine, population 742,371, has one medical school, situated in Brunswick and Portland, the latter having a population of 58,571.

Medical School of Maine.—The medical department of Bowdoin College. The first two years are given at Bowdoin College, Brunswick, the last two at Portland, building situated on Chadwick Street. Organized in 1820. The first class graduated in 1820. The faculty numbers 66. The course covers four years of eight months each. The total fees are $110 for each of the first three years and $135 for the fourth. The Dean is Dr. Addison S. Thayer, 10 Deering Street, Portland. The total number of students in 1913-14 was 67; graduates, 19. The ninety-fourth session begins October 15, 1914, and ends June 24, 1915.

NEW HAMPSHIRE.

New Hampshire, population 443,140, has one medical school, situated at Hanover, population 1,884.

Dartmouth Medical School.—Organized as New Hampshire Medical Institute in 1797. The first class graduated in 1798. It is under the control of the trustees of Dartmouth College. Clinical teaching was discontinued in 1914. The faculty is made of 19 professors and 7 instructors, a total of 26. Two years of collegiate work are required for admission. The course covers nine calendar months in each year, or eight months of actual teaching. Candidates for the B.S. degree in medicine in Dartmouth College may substitute the work of the first two years in medicine for that of the junior and senior years in the academic department. Candidates for the A.B degree may make a similar saving of one year. The fees for the two years in medicine are, respectively, $169.50 and $173.50. Dean Dr. John M. Gile; secretary, Colin C. Stewart. The next session opens September 24, 1914, and ends June 24, 1915.

VERMONT.

Vermont, population 355,956, has one medical school, situated at Burlington, a town of 20,468 people.

Students matriculating in and after the session of 1912-13 who desire to practice medicine in Vermont, must have obtained a preliminary training of at least one year of collegiate work in addition to a standard four-year high school education, this additional year's work to include college courses in physics, chemistry and biology.

University of Vermont College of Medicine, Pearl Street, College Park, Burlington. Organized with complete course in 1822. Classes graduated in 1823 to 1826, inclusive, when the school was suspended. It was reorganized in 1853 and classes were graduated in 1854 and in all subsequent years. The faculty numbers 48. One year of college work in addition to a standard four-year high school education is required for admission. The course of study covers four years of nine months each. The total fees for each of the first three years are $145, and $175 for the fourth year. The Dean is Dr. H. C. Tinkham. The total registration for 1913-14 was 117; graduates, 39. The next session begins September 23, 1914, and ends June 23, 1915.

MASSACHUSETTS.

Massachusetts, population 3,366,416, has four medical schools: Medical School of Harvard University, Boston University School of Medicine, Tufts College Medical School, College of Physicians and Surgeons. They are all situated in Boston, a city of 670,585.

Medical School of Harvard University, 240 Longwood Avenue. Organized in 1782. The first class was graduated in 1788. It has a faculty of 58 professors and 149 associates, assist-

ants, etc., a total of 207. Candidates for admission must present either a recognized college degree with courses in inorganic and organic chemistry or credits for two years of work in a recognized college or scientific school, which must include courses in physics, inorganic and organic chemistry and biology. The session is four years of eight months each. The total fee for each is $225. The Dean is Dr. Edward H. Bradford. The total registration for 1913-14 was 305; graduates, 64. The one hundred and thirty-third session begins September 28, 1914, and ends June 24, 1915.

Boston University School of Medicine, 80 East Concord Street. Organized in 1873. In 1874 the New England Female Medical College, founded in 1848, was merged into it. The first class was graduated in 1874. One year of collegiate work is required for admission. The faculty includes 33 professors, 35 associates, etc., a total of 68. The course covers four years of eight months each. Total fees for each of the four years respectively, are $152, $147, $127, and $155. The Dean is Dr. John P. Sutherland. Total registration for 1913-14 was 113; graduates, 22. The forty-second session begins October 1, 1914, and ends June 2, 1915.

Tufts College Medical School, 416 Huntington Avenue. Organized in 1893 as the Medical Department of Tufts College. The first class was graduated in 1894. It has a faculty of 42 professors and 80 assistants, lecturers etc., a total of 122. One year of collegiate work is required for admission. The course covers four years of eight months each. The total fees are $155 each year. The Dean is Dr. Charles F. Painter. Total registration for 1913-14 was 311; graduates, 62. The twenty-first session begins September 30, 1914, and ends June 1, 1915.

College of Physicians and Surgeons, 517 Shawmut Avenue. Organized in 1880. The first class graduated in 1882. The college announcement gives the names of 228 "matriculants and applicants" for the session of 1913-14, which included both dental and medical students. Fairly reliable information, however, shows that the total attendance of medical students during 1913-14 was 110. There were 13 graduates. *This college has been reported not recognized by The Massachusetts Medical Society and by the licensing boards of thirty-one states.*

Rhode Island.

Rhode Island, population 542,610, has no medical school.

Connecticut.

Connecticut, with a population of 1,114,756 has one medical school, situated in the city of New Haven, population, 133,605.

Candidates for license to practice in Connecticut, who graduate in 1914 or thereafter are not eligible unless, prior to entering on the study of medicine they had completed, in addition to an accredited four-year high school education, at least nine months of collegiate work including college courses in physics, chemistry and general biology.

Yale Medical School, York and Chapel Streets. This is the department of medicine of Yale University. In 1810 a charter was granted for the establishment of this school, and in 1813 it was organized as the Medical Institution of Yale College. The first class was graduated in 1814. The faculty consists of 16 professors and 50 lecturers and assistants, a total of 66. The requirement for admission is two full years of collegiate work plus evidence of satisfactory preparation in physics, general inorganic chemistry and general biology. The course covers four years of nine months each. The fees for the four years, respectively, are approximately $223, $170, $153, and $163. The Dean is Dr. George Blumer. The total registration for 1913-14 was 49; graduates, 8. The one hundred and second session begins October 1, 1914, and ends June 23, 1915.

OPENING OF ST. ELIZABETH'S HOSPITAL.

The new St. Elizabeth's Hospital, Brighton, was formally opened on Monday, Aug. 31, and began to receive patients on Sept. 1.

"The structure is of the Italian style of architecture, rectangular in shape, with a frontage on Cambridge Street of 228 feet and with wings of 60-foot depth, partly enclosing a courtyard of green lawn and flower beds. The central building is set back 200 feet from the sidewalk and has an elevation of more than 60 feet. An important feature of the courtyard is the long colonnade of 30 white columns which support the broad roof of the arcade, under whose protection the convalescent patients receive out-door treatment.

"The building is three stories high and fireproof, being built entirely of cement, with cement facing and red-tiled terra cotta roof. It was designed by Edward T. Graham, a Boston architect. It has a capacity of 200 beds at the present time, but can accommodate many more as soon as new quarters are arranged for the 18 sisters who are staying there. There are 50 doctors on the staff and 40 nurses will be in attendance. The superintendent and physician-in-chief is Dr. John R. Slattery, to whose constant supervision and frequent suggestions, many of the model features of the hospital are due.

"Pure air is constantly taken in from the outside, directly underneath the radiators in every part of the building. As it arises and, gradually becoming cool, sinks, it is drawn by suction of fans in the attic through ventilators and led by pipes away from the building. This insures the freshest of air at all times for the patients.

"Hot water heating prevails, the three-pipe system circulating abundant heat to every corner of the hospital. The stairways, which are in the main constructed of granite and cement, are

exceedingly wide. The woodwork is a feature, the entire building being finished in seasoned North Carolina pine of a beautiful shade. The walls of the corridors and of the outside rooms are done in ivory, those of the inside rooms in silver-gray, and the woodwork in natural finish. The doors are of the automatic-interlocking sort.

"In the basement is a large kitchen, 22 x 34, with the most recent culinary implements and kitchen utensils. No coal is used, all the preparing being done with the aid of steam and gas. On the right is a large gas-boiler and gas range and on the left a long cutting table and a vegetable steamer. Flanking these are large coffee urns, soup kettles, a dish warmer, a cereal cooker, a steam roaster and receptacle for boiling water. Adjoining the kitchen is a scullery, with a modern electric dish washer.

"In the basement are also the house officers' dining room, the nurses' dining room and the sisters' dining room. Opposite the latter are three large refrigerator rooms connected with the service entrance by a heavy iron trolley. The first of these is used for meat, the second for vgetables and the third for dairy products. A temperature of 34 degrees is maintained constantly by ice manufactured in the hospital's own ice plant adjacent. It has a capacity of three tons of ice every 24 hours. The ammonia fumes liberated in the process are safely discharged a distance of 40 feet from the building. The laundry is as complete as an up-to-date workshop.

"For fire protection each floor has two standpipes with 200 feet of hose and a private alarm box. The main entrance coming from Washington street is of Tennessee marble and is lighted by two alabaster lamps, one in the hall and one in the lobby. Both were gifts to the institution.

"The lobby is 40 feet square, and a 14-foot corridor running each way from it is 225 feet long. The pharmacy is on the main floor facing the lobby, and on the left is the surgical out-door department of five rooms, two large operating and three small examination rooms. On the extreme left is the main operating room, and connecting with it on one side, is the sterilizing room and on the other the etherizing room. Nearby is an accident room and also a recovery room.

"In the east wing is the nose and throat department, consisting of one small operating room and two for examination. On the right of the wing is the nurse's lecture room, about 12 x 20, feet, and near it are one large and three small rooms of the out-door patient department.

"In the west wing is the superintendent's dining room and adjoining it is the house officers' dining room. Opposite these is a double air-tight fumigating room, and the house officers' bath rooms.

"The west wing on the second floor is devoted to the use of the nurses, of whom there are 40. Their recreating-room, 18 x 34, is one of the best rooms in the building. A diet-kitchen in each wing of each floor, where food is specially prepared and experiments made, indicates the thoroughness of the hospital's methods. The superintendent's office with bedroom and bath adjoining, the bookkeeper's office and the library are all on the second floor.

"In the east wing is the maternity department, with two wards of 15 beds each and one of 9. Patients can be wheeled out on the veranda of the courtyard through the French casement windows, all of which have roll-a-way screens. Two special infants' tubs have been placed in a large room of the maternity department and here 40 infants can be accommodated.

"The third floor contains wards of 12, 9 and 7 beds each as well as private rooms, which are in the rear. It has a gallery for 20 students, an operating room, a sacristy and a chapel. The west wing is devoted to the nuns for the time being. The third floor veranda extends a distance of 180 feet and has wings 55 feet in length.

"A department which deserves special mention is the x-ray in the east wing of the main floor. It has a suite of rooms on one side of the corridor, consisting of an office, a dark room, and a large operating room. Illuminating boxes for the demonstration of plates are ranged on two sides of the operating room and along one side of the office. The illuminating boxes are large enough to demonstrate a complete series of intestinal plates at one time. There is also in the office a stereoscopic illuminator for viewing plates, which is especially useful for locating foreign bodies, such as needles, bullets, etc.

"Filing cabinets of the latest type for plates and records have been installed. The dark room has the very latest devices, insuring perfection of development. The door need not be opened to pass plates back and forth, as there is a turntable in the wall, through which plates are sent, and it admits no light whatever. The equipment itself consists of the most recent and successful Roentgen apparatus, a Keleket 10-kilowat transformer, a vertical and a horizontal fluoroscope, and table for various kinds of plate work, stereoscopic localizing, etc. The vertical fluoroscope is for viewing the action and condition of chests, hearts, etc., while the horizontal one is for examining stomach, kidneys and bowels. Besides these, there is a complete set of intensifying screens, cones and other necessary apparatus.

"There is an ice plant of enormous capacity for the hospital. A balcony overlooks the courtyard, where there is a thriving vegetable garden and abundant space for flowers another summer. Every other window in the open or private wards on this side of the building is a door as well, from which patients can step into the sunshine which floods every corner of the place. The main kitchen and the ward serving rooms are complete in every particular; so also are the storerooms for linens, with ventilated shelves and other hygienic features."

Correspondence.

PAN-GERMANISM IN MEDICINE—TO WHAT WILL IT LEAD?

BOSTON, Sept. 1, 1914.

Mr. Editor: It is generally admitted that medical education in Europe, particularly in Germany, is superior to ours. This is due to the complete standardization of education, the close affiliation of schools with hospitals, and the laws relating to post-mortem material. Clinical teaching is admittedly their weakest branch. That this very weakness strikes at the root of what is best in medicine as an art, will be shown below.

We have much to be thankful for in the betterment of medical education in this country. The report of the Council on Medical Education shows gratifying progress. There has been an astonishing decrease in the poor medical schools in the country and a corresponding development of the "A plus" and "A" groups.

We still lead all countries in the number of physicians per capita of population. Our average is about one to every 650 persons. In Germany the ratio is one to every 1912 persons, but this contrast is not so great when we consider that the title "praktischer Arzt" is much more safeguarded than here. Over one-third the medical work in Germany is done by charlatans not registered as physicians. In this country a large number of them are so registered.

The phenomenal amount of charlatanism in Germany has received much comment and study. One explanation of it, quoted by the Carnegie Foundation Report on Medical Education in Europe, is that it is due to the compulsory adjustment required to fill the ranks depleted by the high standard of education which made such a great demand of time and money for the preparation of the physician. This is shown to be true in no degree, for there was formerly a much greater scarcity of physicians than now, at a time also when the general health was poorer. It is also shown that instead of being depleted the number of physicians has increased far more rapidly than the population. The true explanation is found in the inauguration of the "Kurierfreiheit" by which legislation anyone is allowed to dispense drugs and treat disease, the title "prakt. Arzt" only being safeguarded from assumption by unqualified persons. Previous to this legislation there were very few charlatans. Now the situation is assuming such tremendous proportions that it is resulting in a considerable financial loss to physicians, the income from proprietary remedies in Prussia alone amounting to over seven and a half million dollars.

Whether the legislation is wholly responsible for this change or whether another factor may not be considered as causal is somewhat doubtful. There are certain tendencies in the evolution of medicine as a pure science as it is developed in Germany which are contributing to the increase of charlatanism. These tendencies are worthy of analysis to us who are so rapidly Germanizing our methods, as a warning, so that we may escape like evils.

A medical school has two important duties, one to medical science, the other to the public; one encouraging and promoting medical education and scientific progress, the other supplying to the public well-trained practitioners. The latter function is really the greater, for out of every graduating class 90% are practitioners and less than 10% are scientists and of these probably only one or two are so eminently fitted for scientific work as ever to accomplish much. The conditions in Germany are reversed. There, there are ninety physicians dawdling with science to every ten doing practice. Of this 90, fully 75% are wasting their time as far as permanent results are concerned. There are thousands of investigators producing thousands of publications yearly, only a very few of which stand the test of time. The keen competition promotes such a desire for priority that the merest hints of new side-lights and theories are hastened into print, only to die ignominiously because of their shallow soil. The very strength of the teaching of theory and the weakness of clinical teaching in Germany produces a few scientists, a large number of pseudo-scientists and few good practitioners. The scientific side is over-developed, the human side greatly neglected. Any American will testify to this who has had practical experience with German physicians or hospitals. They do not know how to treat the individual. They recognize only the disease. The comfort of the patient or the recognition of his personality is not considered. The extremely slow and very imperfect development of trained nurses shows that these have not been thought of. The real poverty of the people and the paternalistic system of Krankenversicherung keep the wards of the general hospitals full. But they are cheerless and gloomy and the patients show extraordinary lack of care. Intercurrent infections in the wards are extremely common. Even in the splendid new institutions it is easy to see from the spirit manifested by the staff that the improved conditions were not for the comfort of the patients. In the finest equipped wards in Europe I have heard the Dozent on the morning rounds more than once say to a patient whose case did not interest him at the moment, "You had better go home as we can't use you here." The human side of medicine is undeveloped. Even in the manifold Anstalten and Kurorten, the physician rarely has a spontaneous interest in the personal equation, but generally, when present, it is the result of psychological study based on theory. These conditions are, I believe, a normal result of German medical standards and are real causes of alarm in copying them in this country.

The common people are uncritical and simple. When sick they want human interest more than scientific refinement and as long as they can get it they will pay for it. It matters little to them whether the human interest is prompted by Christian impulses or by commercial ones. This is a large factor in the strength of charlatanism in Germany and all over the world. Charlatans are enthusiastic, encouraging, interested, always offering new and promising cures to the discouraged invalid. The man of science is cold, non-committal, often discouraging, almost always temperamentally one-sided and impersonal. If human nature were scientifically trained, people would choose the scientist. But human nature is not and never will be scientific, so people will always prefer the less scientific and more personal type, often admirably embodied in the charlatan.

In our desire to encourage scientific progress and stimulate the scientific spirit for the benefit of future generations, the individual should not be lost sight of.

In many university centres, the well-trained physician who has an aptitude for practice is not only looked down upon, but he is being gradually debarred from clinical hospital positions where he is not only of immense value to the efficiency and morale of the clinic but where his rubbing shoulders with medical progress renders him of constantly increasing value to the community at large. These men are also invaluable in the teaching of medicine as they supply to the student what he cannot get from any other source, the practical treatment of the sick,—the human element in medicine. He learns to treat the patient and not the disease. God forbid that we should lose this human touch in medicine as it is lost in Europe.

We have not reached it yet but unmistakable signs of its approach are evident in some quarters. The passing of one generation is leaving a big gap in this respect. The filling of responsible positions with young physicians well trained in the laboratory is giving a great impetus to medical progress. But in the rapid development of the spirit of research, the position of the old-time clinician is somewhat despised. I have heard it stated within a month that clinical medicine has nothing to offer the young man.

Original work, publications, no matter how trivial or unimportant or trashy, command a ready acceptance and form the stepping stones to fame for physicians who possess much theoretical and statistical knowledge, whose physical examinations are faultless scientific achievements but whose practical medicine ends abruptly at the word diagnosis. Their treatment is confined to the administration of the five or six known specifics and the barest outline of dietetic and hygienic principles.

Let not the spirit of research in our medical schools and hospitals overshadow the obligation to the public to furnish practitioners. Let us always bear in mind the fact that out of every class of one hundred in our schools less than five are fitted for original research; the other ninety-five should be fitted to practice, with a working knowledge of medicine and a training in scientific methods. Let us not cater to the five who will inevitably find their niche, and neglect the ninety-five who are to be sent out to educate the public in good medicine and to care for their souls as well as their bodies. The most powerful weapon with which to fight charlatanism is not the raising of medical education to German standards, thereby promoting research and discouraging the practitioner, but the development of our schools to produce well-trained practitioners who will know how to diagnos the disease and treat the patient. The elimination of the poor medical school is necessary. Better legislation and laws of registration are necessary, but the development of medicine as a pure science and stamped "made in Germany" is greatly to be deplored.

Very truly yours,

H. P. GREELEY, M.D.

THE STATE BOARD OF INSANITY AND TRUSTEES.

WORCESTER, Aug. 8, 1914.

Mr. Editor: An article on the new board of insanity in you issue of August 6 calls attention to "the notorious" want of harmony in the old board which made reorganization necessary. As one member of each faction has received an appointment to the new board, conspicuous improvement can scarcely be expected to follow the Governor's action.

My resignation as a member of the Board of Trustees of the Worcester State Hospital was handed to the Governor on Aug. 1 and I wish to call attention to the fact that it is the unpaid local boards who are to be burdened with excessive detail work, written reports, etc.; work which up to this time has been performed by the paid subordinates of the State Board; while to them remains no shadow of authority to control these several institutions.

Under these circumstances it seemed to me and I presume to such other trustees as have withdrawn from these positions that the Commonwealth was asking too much and giving too little. I enclose a copy of my letter to Governor Walsh.

Worcester, Mass., Aug. 1, 1914.

To his Excellency the Governor:

The provisions of Senate bill No. 615, recently passed by the Legislature and signed by you, so completely change the functions and duties of the Board of Trustees of the Worcester State Hospital that I find, after careful consideration, that it will be impossible for me longer to serve as Trustee and I therefore herewith regretfully hand you my resignation.

The detail work imposed upon the Trustees by sections B, C, and D, of this bill 615 will require an amount of time which I am unable to give to the work.

If I am not mistaken, a proper performance of the duties herein provided for would take practically all the time of certain trustees. With this added work is combined the practically entire removal of control from the hands of the local board, this control being placed in the new state board, so that the local board are simply to make suggestions which the central board may or may not heed, the trustees being at the same time held responsible by the public for anything that may happen, without power to prevent catastrophy or remedy conditions. There seems to me, therefore, neither honor nor utility in continuing to serve the Commonwealth which has through its General Court upset the practice of 80 years by a bill passed without a roll call, practically without debate, at the end of the session, with no opportunity offered those most interested in the institutions for the insane to express an opinion as to its merits.

Very respectfully,

SAMUEL B. WOODWARD, M.D.

GERMAN PHOTOGRAPHY OF THE LIVER AND SPLEEN.

BOSTON, Aug. 15, 1914.

Mr. Editor: The clipping from an Italian paper, attached hereto, gives the information that Dr. Rautenburg has informed the Medical Society of Berlin that he has discovered a method to photograph the liver and the spleen by means of the Roentgen-rays.

He has obtained by this means so-called contrast-pictures which put those organs (spleen and liver) in very clear relief.

With this picture one is able to distinguish the normal from the abnormal tissue, and, also, to detect the presence of tumors and functional abnormality.

It is believed that this new method will be very useful in diagnosing abdominal disease.

Yours very truly,

GAETANO PRAINO, M.D.

LA FOTOGRAFIA DEL FEGATO E DELLA MILZA.

Il dott. Rautenburg ha informato la Società medica di Berlino di avere scoperto un sistema per fotografare il fegato e la milza mediante i raggi Roentgen.

Egli è riuscito a ciò mediante le cosidette fotografie-contrasto, le quali mettono in rilievo chiarissimo quegli organi.

Con questa fotografia si possono distinguere le parti sane da quelle in cui si manifesta qualche disordine, e fissare la presenza di tumori ed i anormalità funzionali.

Si crede che questo nuovo sistoma sarà utilissimo per la diagnosi delle malattie addominali.

RECENT DEATHS.

DR. W. E. DILLINGHAM, of Mead, Colo., who was killed by lightning on Aug. 20, was born at New Bedford, Mass., in 1879. He was for a time a student at the Harvard Medical School, but received his degree of M.D. in 1903 from the Denver and Gross Medical College, Denver, Colo. He is survived by his widow and by one son.

DR. OWEN ST. CLAIR O'BRIEN, who died on Sept. 1 at Rockport, Mass., was born in Nova Scotia in 1833, and graduated from Bowdoin College in 1866. He served throughout the Civil War as a surgeon in a Maine cavalry regiment, and subsequently in the navy. After the war he practised his profession at Pemaquid, Me., and in 1884 removed to Rockport, where he became a member of the medical staff of the Haskins Hospital. He was twice married but leaves no living issue.

DR. LEVI D. SHEETS of Glen Ridge, N. J., died on August 25. He was born in Maryland in 1828, and was graduated from the medical department of the University of the City of New York in 1849. During the Civil War Dr. Sheets served as a surgeon in the army.